Response to Submissions Report - August 2015

Kembla Grange Resource Recovery Facility

Building Material Storage and

Resource Recovery Facility Exceeding 30,000 Tonnes per Annum and

Redesign and Expansion of Approved Facility

Lot 10 DP 878167

50 Wyllie Road, Kembla Grange

Application No. SSD-5300

Prepared for Bicorp Pty Ltd

by TCG Planning

29 August 2015

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Document Status			**Approved For Issue**	
Version	Author	Reviewer	Signature	Date
Draft	Carrie Wilkinson Elaine Treglown	Elaine Treglown	Authorised	13.8.15
Final	Elaine Treglown	Elaine Treglown		29.8.15

Contents

1 Introduction

1.1 Background and Development Proposal

In September 2014 TCG Planning (on behalf of Bicorp Pty Ltd) submitted SSD5300 seeking approval for an increase in operational capacity and the redesign and expansion of the footprint of storage areas at the Kembla Grange Waste Recovery Facility, located at Lot 10 DP 878167 Wylie Rd, Kembla Grange. The land is currently utilised for the purpose of a building material storage and recycling facility, which was approved on 29 April 2010 pursuant to Development Consent 2009/1153. Modification was granted to this consent on 17 July 2012 (DA-2009/1153/A) to increase the annual tonnage to 29,999 tonnes per year. A further modification (DA-2009/1153/D) was granted on 7 May 2015 for the "*reconfiguration of the site layout and additional site facilities*". Modifications B and C, which sought further amendment to DA2009/1153, were withdrawn from Council.

The expanded facility, which is the subject of the current state significant development application (SSD 5300), will process up to 230,000 tonnes of waste per annum. Following the issuing of DA-2009/1153/D, which authorised a number of existing structures/facilities on the site, it is confirmed that the current application seeks approval for:

- The processing of up to 230,000 tonnes per annum of building and demolition waste, including brick, concrete, soils, timber, general/solid waste, and non putrescible organic waste;
- Building material storage, waste storage, and processing/stockpiling areas; and
- Ancillary infrastructure including plant and equipment such as crushers, screens and front-end loaders.
- The redesign and expansion of the footprint of storage areas on site, thereby providing a more functional operational arrangement. In addition to an expansion of the footprint of the operations, this development application seeks consent for the provision of an upgraded stormwater management system; the provision of the additional buildings on the site including an OHS training room, office and workshop; minor alterations and the fitout of the approved shed for use as an indoor processing and storage shed; the provision of additional car parking spaces; a skip bin storage area and provision of a truck parking area.
- The undertaking of the development in two stages. Stage 1 will incorporate all works, with the exception of works to the east of the watercourse [including the construction of the workshop, OHS training room and office building), on-site detention basin (OSD) B, and the truck parking/ access], which will be constructed in Stage 2.

The Environmental Impact Assessment was publicly advertised from 9 October to 7 November 2014 and a number of submissions were received from members of the public, Wollongong City Council and state agencies. A Response to Submissions (RTS), which addressed the submissions received during this exhibition period, was submitted to the Department of Planning and Environment on 20 May 2015 and this document was referred to a number of government agencies for comment. A further Response to Submissions (RTS) has now been prepared on behalf of the applicant, Bicorp Pty Ltd, to address the issues raised as a result of this re-referral process. This report is also accompanied by a revised Rail Level Crossing Modelling Traffic Management Plan (Version D) which was prepared by Cardno in August 2015 to incorporate consideration of special events at the Kembla Grange racecourse and the potential traffic impact on the railway level crossing located on West Dapto Road, Kembla Grange.

1.2 Submissions

This 'Response to Submissions Report' addresses submissions from the following persons/agencies/organisations:

- Department of Primary Industries (NSW Office of Water);
- Environment Protection Authority;
- NSW Rural Fire Service;
- Office of Environment and Heritage;
- Wollongong City Council;
- One (1) submission from an adjoining business operator.
- One (1) confidential public submission.

1.3 Report Structure

This response to Submissions/Preferred Project report is structured in the following manner;

Section 1: Introduction

Contains the background to the project and a summary of the submissions received in response to the re-referral of the previous Response to Submissions report.

Section 2: Response to Submissions

Provides a response to the issues raised in the submissions received from government agencies and the public.

Section 3: Modifications made to the Project

Confirms modifications which were made to the project as a result of the additional assessment process.

Section 4: Revised Statement of Commitments

Presents the revised Statement of Commitments for the project.

Table 1 lists the documents which are appended to this report:

Table 1: Amended/Additional Documentation

Appendix	Report/Plans	Author	Reference	Date
Appendix 1	Correspondence providing response to EPA comments regarding air quality assessment	GHD	21/24245	30 July 2015
Appendix 2	Revised Air Quality Assessment	GHD	-	July 2015
Appendix 3	Revised Landscape Plan	Ochre	Dwg 1442-LC01G Dwg 1442-LC02	12 August 15 13 December 12
Appendix 4	Revised Vegetation Management Plan	Southern Habitat	Version 6	August 2015
Appendix 5	Revised Surfaces Plan	KFW	Drawing C15 Revision F	2 July 2015
Appendix 6	Separate Development Plans (Sect 96) Separate Development Plans Compilation Plan	KFW	Dwg C37 Rev B Dwg C38 Rev C Dwg 35 Rev A	11.8.15
Appendix 7	Correspondence	RMB Lawyers	-	17 July 2015
Appendix 8	Rail Level Crossing Modelling Traffic Management Plan West Dapto Road-Kembla Grange	Cardno	Version D	25 August 2015

1.4 Summary of Submissions

A total of four (4) submissions were received from government agencies, one from the local Council, and two (2) from members of the public. **Table 2** summarises the key issues raised in the government agency submissions and public submissions and the relevant section of this Response to Submissions where each issue is addressed.

Table 2: Summary of Submissions

Submission Issue	Stakeholder	Report Section
Air Quality - Dust	Environment Protection Authority Patrick Autocare	Section 2.1
Odour	Environment Protection Authority Patrick Autocare	Section 2.2
VMP and Bushfire Mitigation	Rural Fire Service Department of Primary Industries (Office of Water) Office of Environment and Heritage	Section 2.3
Groundwater	Department of Primary Industries (Office of Water)	Section 2.4
Flood Impact	Office of Environment and Heritage	Section 2.5
Geotechnical	Wollongong City Council	Section 2.6
Approvals, Plans and Schedule of Works	Wollongong City Council Department of Planning and Environment	Section 2.7
Public Utility Infrastructure	Wollongong City Council	Section 2.8
Site Operations and Environmental Impacts	Private and Confidential Submission	Section 2.9

2 Response to Submissions

2.1 Air Quality- Dust

The Environment Protection Authority (EPA) has reviewed the Revised Air Quality Impact Assessment (AQIA) and is of the opinion that additional work is required to adequately assess impacts on the environment as a result of the proposed development. Specifically, the EPA raises issues in relation to the impact of the proposed development on air quality at the adjacent Patrick Autocare site. With regard to AQIA tests and results obtained from the Patrick Autocare site, the EPA express the following concerns:

- *"Section 2.5 of the revised AQIA discusses background air quality. There are labelling errors in tables 2 and 3 which make it difficult understanding the approach taken to estimating background concentrations of particles. The choice of the 70th percentile as representative of annual concentration is not justified and no information provided for the background dust deposition rate of 2g/m^2/month. It is not clear whether a level 1 or level 2 assessment has been undertaken".*

The EPA provide extracts of Tables 1, 2, and 3 from Section 2.5 of the AQIA and point out an error in the calculation of dust deposition (g/m^2/month) impacts on Patrick Autocare, as illustrated in Table 3. Specifically, the EPA highlight how the dust deposition level at receptor 5 (given as 3.10g/m^2/month) is "*erroneously listed as 2.1 [g/m^2/month] in both the exhibited AQIA and the revised AQIA*".

Whilst the revised AQIA shows that adoption of dust mitigation strategies reduces impacts at the six identified receptors to less than the listed air quality criteria, the EPA state the following with regards to Patrick Autocare:

- *"Given the close proximity of Patrick Autocare [to the proposed development], the EPA does not accept the use of buildings on the site to determine the closest receptor. The EPA interprets the assessment as showing an impact greater than criterion at a receptor. This requires further investigation".*

The EPA recommends that the following be undertaken

- *a level 2 assessment of air quality impacts following the guidance of the Approved Methods and Assessment of Air Pollutants in New South Wales, particularly section 5;*
- *source apportionment to determine the major contributors to the significant particle increments;*
- *determining the frequency large particle increments occur;*
- *describing the conditions leading to large particle increments to assist identifying additional mitigation measures in both plant design and operation.*

Patrick Autocare is similarly of the opinion that the updated Air Quality Impact Assessment by GHD does not resolve all of their concerns regarding the impact of the proposal on staff and operations. Specifically, Patrick Autocare remained concerned by the impacts of dust deposition, PM10 concentrations and odour, on areas of the site where staff work and vehicles are stored.

With respect to **dust deposition** Patrick Autocare states within its submission:

On page 27 of the Response to Submissions Report, TCG quotes the Air Quality Assessment at Section 6.2, which states: "to be conservative, the receptor location for dust deposition has been assumed to be at the northern boundary of the Patrick Autocare property. This has been undertaken to show that dust deposition levels are predicted to be below the criteria on the entire site" (emphasis added).

*Similarly GHD notes on page 40 of the Air Quality Assessment "*Note for Patrick Autocare PM10, PM2.5 and TSP have been predicted at the nearest building. Deposited dust has been predicted at the boundary of the site."*

However Figure 17 of the GHD assessment "Predicted Annual dust deposition (with mitigation) g/m^2/month" (included below) shows the location of the PAC Sensitive Receiver "R67" on the northern property boundary is not shown. To provide clarity the location of both receivers should be shown on Figure 17.

The Patrick Autocare submission contains the following comments in regards to the calculation of **PM10 concentration** at their site:

"... GHD have predicted the dust deposition rates based on a sensitive receiver at our property boundary whilst modelling the sensitive receivers for the other impacts based on a location at the northern edge of the site's building named 'R6'.

At this location the proposed development is forecast to create a cumulative PM10 impact of 49.3µg/m3 against an impact criteria of 50µg/m3. The forecast is within 1.4% of the criteria limit.

The borderline PM10 result is confirmed by Figure 15 of the GHD assessment "Predicted Cumulative PM10 24-hour Average Concentration (with mitigation) µg/m3" (included below). The location of the sensitive receiver "R6" appears to be located on the PM10 cumulative impact contour level 50µg/m3. This contour level defines the area of impact within which the PM10 impact criteria would be exceeded. Had the sensitive receiver R6 been located 10 metres further west or north, Figure 15 shows it is highly likely the criteria would be exceeded. GHD modelled a location on our northern boundary when predicting dust deposition impacts. Had GHD used the same "conservative" assumption for predicting PM10 impacts, it would have exceeded the criteria. We do not have confidence that the Air Quality Assessment's results are valid when the conclusions of the assessment appear to be highly sensitive to variations in the location and sensitive receiver.

Patrick Autocare suggest that the 'Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales' defines Sensitive Receptors as a "*location where people are likely to work or reside; this may include a dwelling, school, hospital, office or public recreation area*". They further advise that their workers are not confined to buildings on the site, as staff maintaining and handling vehicles parked on the hard stand surfaces across the site and vehicles for future sale are stored across the site in the open air. They argue that the stored vehicles would be classed as sensitive receivers along with staff, and suggest that "*dust and particularly dust from concrete crushing has the potential for vehicles to require full pain resprays or an acid wash, incurring both time and financial*

costs". Consequently, Patrick submit that it would be more appropriate for sensitive receiver R6 to be placed on the northern boundary.

Response:

In response to the issues raised by the EPA and Patrick Autocare a revised Air Quality Assessment was prepared by GHD in July 2015. A copy of this revised assessment is contained as Appendix 2 of this RTS. This assessment is accompanied by correspondence prepared by GHD dated 30 July 2015 which summarises the changes which have been made in the latest version of the Air Quality Assessment to address the issues raised. A copy of this correspondence is contained as Appendix 1 of this RTS

With respect to the EPA's requirement that a level 2 assessment be conducted, Section 1.4 of the Air Quality Assessment, which was prepared by GHD in April 2015, confirmed that the assessment which was conducted comprised a "*Level 2 modelling assessment to predict odour and dust impact (total suspended particles (TSP), PM10, PM2.5, dust deposition using NPI emissions factors...*". This statement is also contained in section 1.4 of the revised Air Quality Assessment prepared by GHD in July 2015. Further, the correspondence prepared by GHD dated 30 July 2015 (refer Appendix 1) reconfirms that "*A level 2 assessment of air quality impacts has been prepared following guidance in the Approved Methods for Modelling and Assessment of Pollutants in New South Wales (DECC, 2005)*".

The following **changes have been made in the latest revision of the Air Quality Assessment** (dated July 2015) to address these additional comments;

- The **receptor location R6** has been moved to the northern boundary of the Patrick site for both the odour and dust assessments. The location has been chosen to take into account maximum dust and odour impacts from the proposal. This can be seen on all figures in the air quality assessment.

- **Individual dispersion model predictions** (24 hour average) have been added to the corresponding measured background concentration as measured at the OEH site at Kembla Grange. This is consistent with the guidance provided in Section 11.2.b Level 2 assessment - Contemporaneous impact and background of the Approved Methods. Results are summarised in Section 6.2 and detailed results are shown in Appendix C of the Air Quality Assessment.

- The **meteorological conditions** leading to worst case dust impacts are discussed by GHD in Section 6.4 of the revised Air Quality Assessment, where it is stated:
  "*As discussed in Section 6.2, the proposal is predicted to comply with the Impact Assessment criteria for dust at all sensitive receivers. An analysis was undertaken to check which days and meteorological conditions lead to the maximum predicted dust impact at Receiver 6, which is immediately south of the site. This will assist Wollongong Recycling in implementing proactive dust management onsite. Other days were predicted to have a higher dust level at Receiver 6 but this was not from Wollongong Recycling, but from other dust sources that contributed to the background level recorded at the EPA dust monitoring station. Days with the largest predicted dust increment from the site are presented in Table 14*".

Table 14 from the revised Air Quality Assessment has been reproduced as Table 3 of this RTS:

Table 3: Detailed maximum predicted Pm_{10} 24 hour dust increment at R6 (µg/m^3)

Date	Pm_{10} 24 hour average (µg/m^3)		
	Background	Predicted Increment	Total
13/06/09	18.2	26.4	44.6
16/08/09	13.4	24.6	38.0
11/08/09	22.1	22.7	44.8
10/04/09	14.1	20.8	34.9
03/04/09	17.5	20.1	37.6

Reference: Table 14 of Revised Air Quality Assessment, GHD July 2015

Section 6.4 of the revised Air Quality Assessment also states:

"The Meteorological conditions common to all these days with the maximum predicted increment was the presence of low wind speeds with an F class temperature inversion and low mixing height (50M). These poor dispersion meteorological conditions all occur between 6 am and 8 am and result in dust that is generated by process units within the premises being carried off-site by the light ambient wind. Receiver 6 is located close to the site and can potentially be exposed to elevated levels of dust for short periods during poor atmospheric dispersion.

The modelling has been undertaken conservatively assuming that all sources are operating concurrently. In reality it is very unlikely (especially at 6 am or 7 am) that all equipment would be onsite at once or operating concurrently with these worst case meteorological conditions to resulting in the predicted impacts above."

- The **emission inventory** in Table 6 of the revised Air Quality Assessment shows the source apportionment of significant dust emissions from the proposal. As all equipment has been conservatively assumed to operate nonstop all day, this table can be used to determine which source would contribute to offsite dust impacts at any one time. Table 6 of the revised Air Quality Assessment is reproduced as Table 4 of this RTS.

Table 4: Dust Emission Inventory

Equipment	Default TSP Emission Factor	Default PM_{10} Emission Factor	Unit	Application	TSP Emission Rate (kg/hr)	PM_{10} Emission Rate (kg/hr)	$PM_{2.5}$ Emission Rate (kg/hr)
Screen	0.08	0.06	kg/t	One mobile screens, 36.1 tonnes per hour per screen	2.89	2.17	0.67
Screen with Mitigation	0.04	0.03	kg/t	One mobile screen, 36.1 tonnes per hour	1.45	1.09	0.34
Loaders	0.025	0.012	kg/t	Two loaders, 36.3 tonnes per hour per loader	0.91	0.44	0.14
Excavator	0.025	0.012	kg/t	Three excavators, 24.2 tonnes per hour per excavator	0.61	0.29	0.09
Crusher	0.2	0.02	kg/t	One crushers, 20.4 tonnes per hour	4.08	0.41	0.13
Crusher with mitigation	0.01	0.004	kg/t	One crushers, 20.4 tonnes per hour	0.204	0.0816	0.0253
Reclaimer	0.06	0.03	kg/t	One reclaimer, 20.4 tonnes per hour	1.22	0.61	0.19
Dump Truck-dumping	0.012	0.0043	kg/t	Dumping 36.1 tonnes per hour	0.43	0.16	0.05
Dump Truck-travelling on unpaved roads	3.901	1.158	kg/VKT	Average of 20 dump trucks per hour. Haul route 400 metres. Equals 8 km per hour total travel.	31.21	9.26	2.88
Dump Truck-travelling on unpaved roads with mitigation (Level 2 water)	0.975	0.2895	kg/VKT	Average of 20 dump trucks per hour. Haul route 400 metres. Equals 8km per hour total travel	7.80	2.32	0.72
Dump Truck-travelling on unpaved roads with mitigation (chemical dust suppression)	0.975	0.2895	kg/VKT	Average of 20 dump trucks per hour. Haul route 400 metres. Equals 8km per hour total travel.	3.12	0.93	0.29
Bulldozer with mitigation	4.25	1.03	Kg/h/veh	One bulldozer 6 hours per day	2.13	0.52	0.16
Wind Erosion	0.4	0.2	Kg/ha/hr	Assuming stockpiles of various sizes located around the site	-	-	-
Wind Erosion with watering	0.2	0.1	Kg/ha/hr	Assuming stockpiles of various sizes located around the site	-	-	-

Reference: Table 6 of Revised Air Quality Assessment, GHD July 2015

- **Dust from crushing activities alone** has been assessed at the Patrick Autocare site and is summarised in Section 6.3 of the revised Air Quality Assessment. Section 6.3 confirms that the assessment of dust from concrete crushing activities alone was undertaken to address concerns by Patrick Autocare that there is "*potential for vehicles to require full paint resprays or an acid wash*". GHD note that "*Patrick have not made any complaints to date that the existing concrete crushing activities undertaken onsite have any noticeable dust impacts and did not address this as an issue in the Patrick EIs (Statement of Environmental Effects Reference 111017-04/Rpt 001 Ver 0, Cardno March 2014)*".

  Accordingly, GHD summarise the results of the assessment within their correspondence of 30 July 2015 where it is stated: "*Monthly dust deposition from crushing is predicted to be 0.034 g/m^2 at the property boundary and even less at other areas of the Patrick site. This represents less than 2% of the allowable increment amenity dust criteria in the Approved Methods and is not predicted to cause any noticeable impact on cars at the Patrick site*".

  Accordingly, it is considered that there has been no evidence presented by Patrick Autocare to substantiate its claim that dust from crushing activities will impact on vehicles and will require additional management within their operations. On the basis of the detailed assessment conducted by GHD it has been shown that the impact of crushing activities will be exceptionally minor and is not at a level which will result in noticeable impact on the Patrick Autocare operations.

- Detailed **predicted dust emissions** have been presented for all receivers in Appendix C of the revised Air Quality Assessment. These have been sorted and ranked in three columns-background dust, dust increment from site and the total dust.

- **Daily measured dust levels** at the Kembla Grange OEH monitoring site of the year 2009 are presented in Appendix A of the revised Air Quality Assessment. Days where the levels exceeded the 50µg/m^3 criteria have been highlighted in yellow.

- With respect to the potential impact of **contaminated dust** GHD reviewed the Waste Management Plan for the proposal (Benviron Group, April 2015). GHD confirm within their correspondence of 30 July 2015 "*There is no mention of contained products or waste that may result in contaminated dust form the site*". Further, Section 4.1 of the revised Air Quality assessment prepared by GHD in July 2015 confirms "*a review of the waste accepted at the site for crushing has not identified waste streams that may give rise to contaminated dust*".

The **outcomes of the revised Air Quality Assessment** are summarised as follows;

Section 6 of the revised Air Quality Assessment contains an Assessment of Impacts as a result of the updated modelling. Specifically, Table 12 provides a summary of the predicted results from the Level 2 air quality assessment dispersion modelling for the six (6) identified receivers. This table is reproduced in Table 5 of this RTS.

Table 5: Maximum Predicted Dust Impact at Sensitive Receivers

Pollutant	Averaging Period	Units	Maximum Predicted Incremental Impact	Maximum Predicted Cumulative Impact	Additional Days Exceeding Criteria	Criteria
Receiver 1:57 Fairloch Ave, Farmborough Heights						
Pm_{10}	24-hour	µg/m³	41.6	**55.3**	**7**	50
$Pm_{2.5}$	24-hour	µg/m³	12.9	17.2	-	-
Pm_{10}	Annual	µg/m³	3.6	27.7	-	30
TSP	Annual	µg/m³	10.8	59.0	-	90
Dust deposition	Annual	g/m²/month max. total	1.3	3.3	-	4
Receiver 2: Ian McLennan Park						
Pm_{10}	24-hour	µg/m³	24.1	48.2	0	50
$Pm_{2.5}$	24-hour	µg/m³	7.5	15.0	-	-
Pm_{10}	Annual	µg/m³	1.1	25.2	-	30
TSP	Annual	µg/m³	3.2	51.4	-	90
Dust deposition	Annual	g/m²/month max. total	0.2	2.2	-	4
Receiver 3: Macedonian Orthodox Church						
Pm_{10}	24-hour	µg/m³	24.9	51.1	1	50
$Pm_{2.5}$	24-hour	µg/m³	7.7	15.9	-	-
Pm_{10}	Annual	µg/m³	1.4	25.5	-	30
TSP	Annual	µg/m³	4.1	52.3	-	90
Dust deposition	Annual	g/m²/month max. total	0.3	2.3	-	4
Receiver 4: Kingston Lodge						
Pm_{10}	24-hour	µg/m³	6.5	48.2	0	50
$Pm_{2.5}$	24-hour	µg/m³	2.0	15.0	-	-
Pm_{10}	Annual	µg/m³	0.4	24.5	-	30
TSP	Annual	µg/m³	1.0	49.2	-	90
Dust deposition	Annual	g/m²/month max. total	0.05	2.05	-	4
Receiver 5 Rural Fire Service						
Pm_{10}	24-hour	µg/m³	34.3	**54.3**	6	50
$Pm_{2.5}$	24-hour	µg/m³	10.7	16.9	-	-
Pm_{10}	Annual	µg/m³	3.1	27.2	-	30
TSP	Annual	µg/m³	9.4	57.6	-	90
Dust deposition	Annual	g/m²/month max. total	1.1	3.1	-	4
Receiver 6 Patrick Autocare						
Pm_{10}	24-hour	µg/m³	**162**	**79.8**	**40**	50
$Pm_{2.5}$	24-hour	µg/m³	50.3	24.8	-	-
Pm_{10}	Annual	µg/m³	10.6	34.7	-	30
TSP	Annual	µg/m³	30.9	79.1	-	90
Dust deposition	Annual	g/m²/month max. total	**9.1**	**11.1**	-	4

Reference: Table 12 of Revised Air Quality Assessment, GHD July 2015

Predicted dust emissions with mitigation at the sensitive receivers are presented in Table 13, which is reproduced as Table 6 of this RTS.

Table 6: Maximum Predicted Dust Impact at Sensitive Receivers with Mitigation Measures

Pollutant	Averaging Period	Units	Maximum Predicted Incremental Impact	Maximum Predicted Cumulative Impact	Additional Days Exceeding Criteria	Criteria
Receiver 1:57 Fairloch Ave, Farmborough Heights						
Pm_{10}	24-hour	µg/m³	9.6	48.7	0	50
$Pm_{2.5}$	24-hour	µg/m³	3.0	15.1	-	-
Pm_{10}	Annual	µg/m³	0.9	25.0	-	30
TSP	Annual	µg/m³	1.8	50.0	-	90
Dust deposition	Annual	g/m²/month max. total	0.25	2.25	-	4
Receiver 2: Ian McLennan Park						
Pm_{10}	24-hour	µg/m³	5.2	48.2	0	50
$Pm_{2.5}$	24-hour	µg/m³	1.6	15.0	-	-
Pm_{10}	Annual	µg/m³	0.2	24.3	-	30
TSP	Annual	µg/m³	0.5	48.7	-	90
Dust deposition	Annual	g/m²/month max. total	0.04	2.04	-	4
Receiver 3: Macedonian Orthodox Church						
Pm_{10}	24-hour	µg/m³	5.6	48.2	0	50
$Pm_{2.5}$	24-hour	µg/m³	1.7	15.0	-	-
Pm_{10}	Annual	µg/m³	0.3	24.4	-	30
TSP	Annual	µg/m³	0.6	48.8	-	90
Dust deposition	Annual	g/m²/month max. total	0.05	2.05	-	4
Receiver 4: Kingston Lodge						
Pm_{10}	24-hour	µg/m³	1.5	48.2	0	50
$Pm_{2.5}$	24-hour	µg/m³	0.5	15.0	-	-
Pm_{10}	Annual	µg/m³	0.1	24.2	-	30
TSP	Annual	µg/m³	0.2	48.4	-	90
Dust deposition	Annual	g/m²/month max. total	0.01	2.01	-	4
Receiver 5 Rural Fire Service						
Pm_{10}	24-hour	µg/m³	8.6	48.7	0	50
$Pm_{2.5}$	24-hour	µg/m³	2.7	15.1	-	-
Pm_{10}	Annual	µg/m³	0.7	24.8	-	30
TSP	Annual	µg/m³	1.4	49.6	-	90
Dust deposition	Annual	g/m²/month max. total	0.2	2.2	-	4
Receiver 6 Patrick Autocare						
Pm_{10}	24-hour	µg/m³	26.4	49.5	0	50
$Pm_{2.5}$	24-hour	µg/m³	8.2	15.4	-	-
Pm_{10}	Annual	µg/m³	2.8	26.9	-	30
TSP	Annual	µg/m³	6.5	54.7	-	90
Dust deposition	Annual	g/m²/month max. total	1.5	3.5	-	4

Reference: Table 13 of Revised Air Quality Assessment, GHD July 2015

Section 6.2 (Dust Mitigation) of the revised Air Quality Assessment confirms that "*Figure 13 and Figure 14 show the maximum predicted 24-hour PM10 (increment and cumulative ground level concentrations (GLC) contours for WRF operations with mitigation, Figure 15 shows the maximum predicted cumulative annual TSP ground level concentration (GLC) contours for WRF operations with mitigation and Figure 16 shows the predicated annual dust deposition contours for WRF operation with mitigation. The predicted 24-hour PM10 concentrations do not include days where the measured background levels already exceeded the criteria*". Figures 13, 14, 15 and 16 of the revised Air Quality Assessment are reproduced as Figures 1, 2 ,3 and 4 respectively of this RTS.

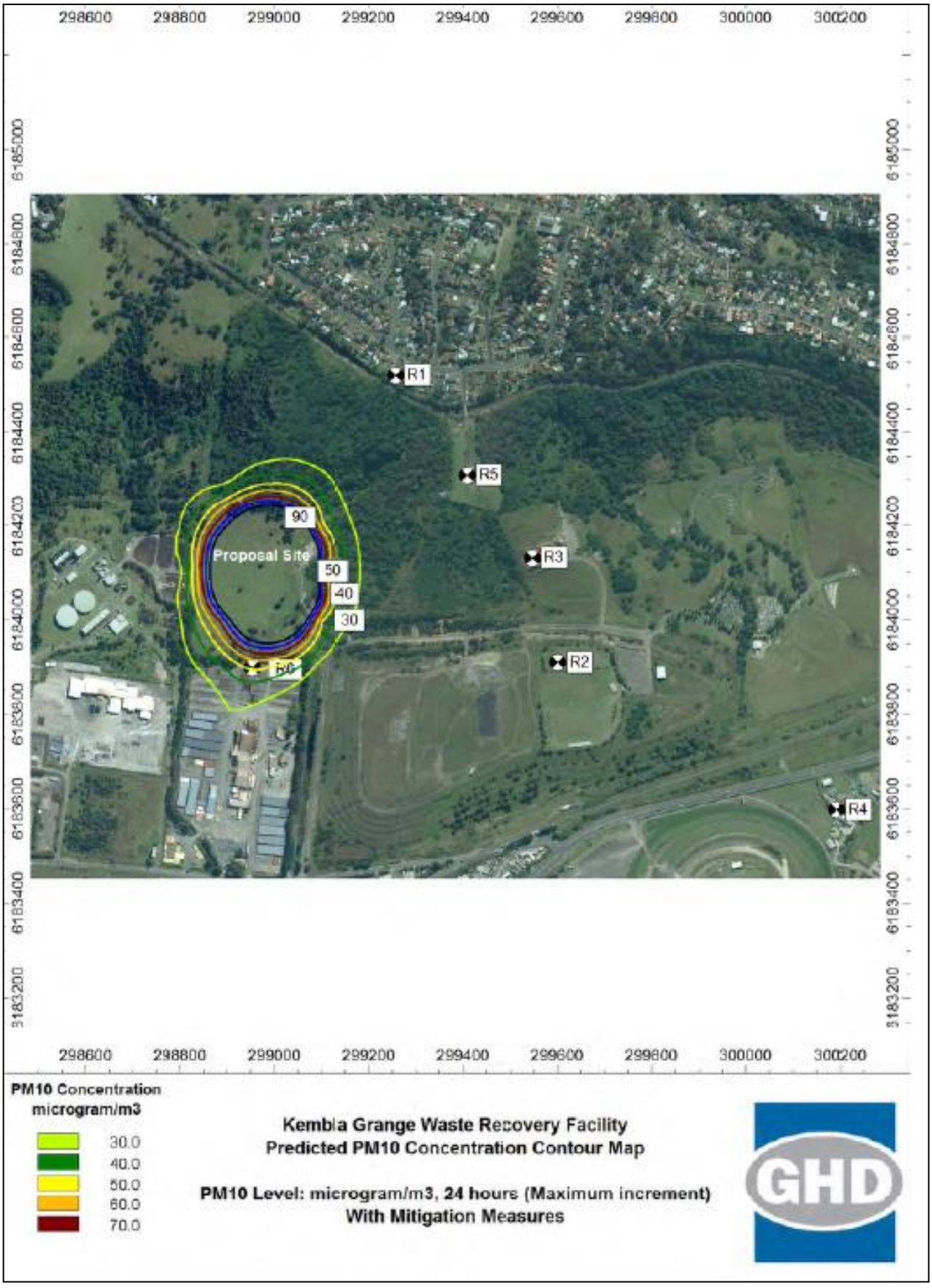

Figure 1: Predicted Maximum Increment PM_{10} 24-hour Average Concentration (with mitigation) $\mu g/m^3$

Reference: Figure 13 of Revised Air Quality Assessment, GHD July 2015

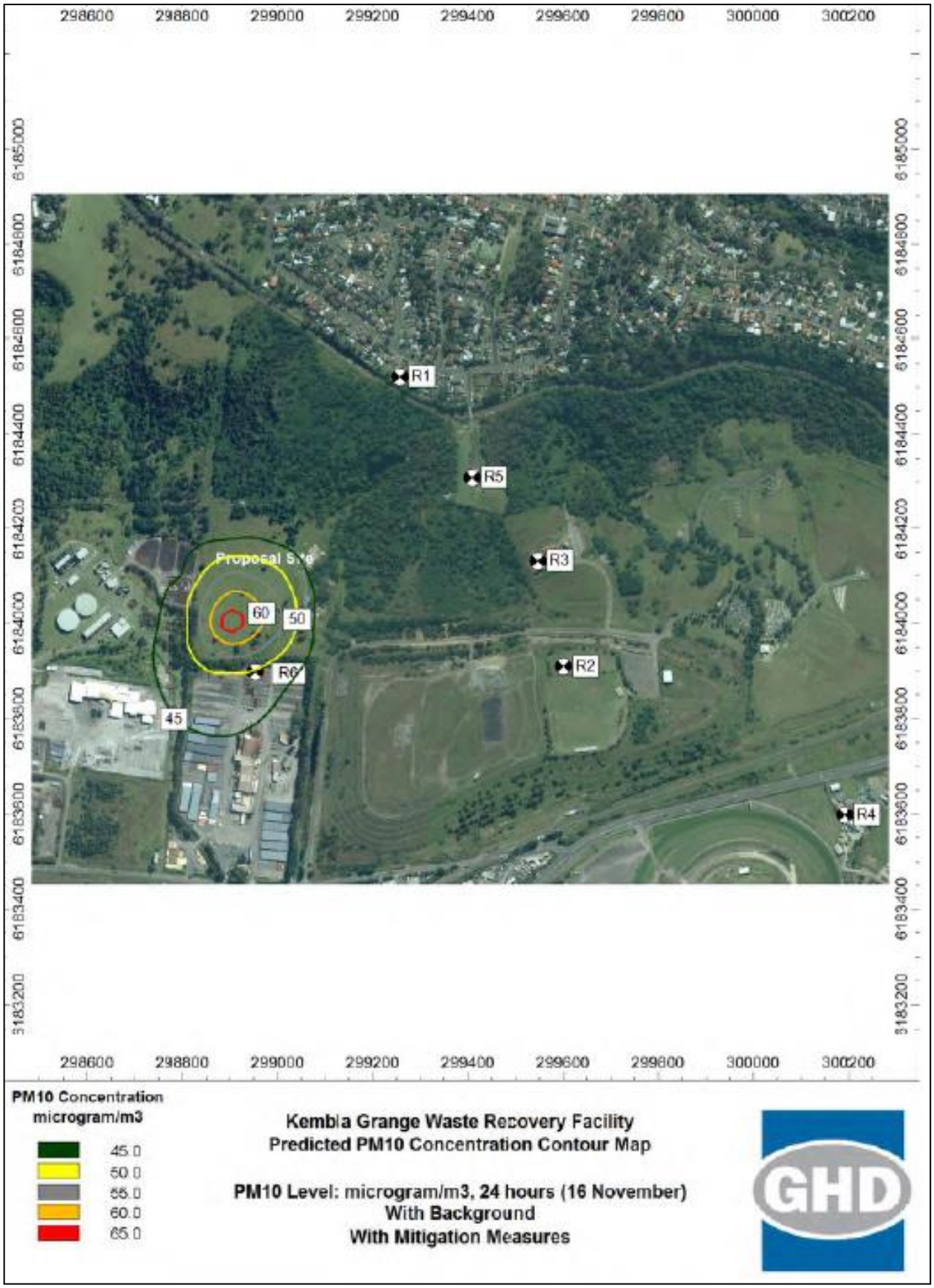

Figure 2: Predicted Maximum Cumulative PM_{10} 24-hour Average Concentration (with mitigation) $\mu g/m^3$

Reference: Figure 14 of Revised Air Quality Assessment, GHD July 2015

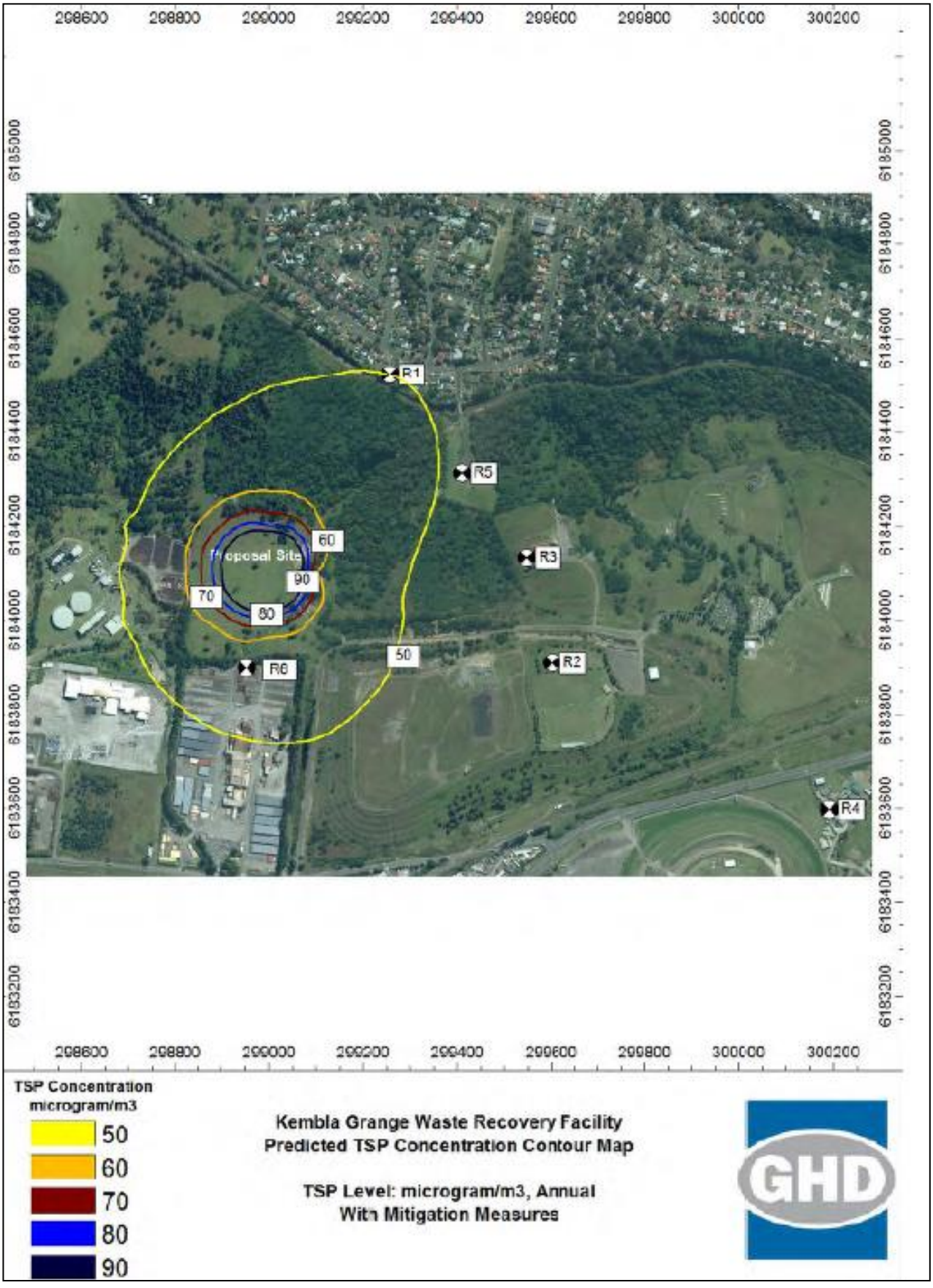

Figure 3: Predicted – Cumulative TSP Annual Average Concentration (with mitigation) $\mu g/m^3$

Reference: Figure 15 of Revised Air Quality Assessment, GHD July 2015

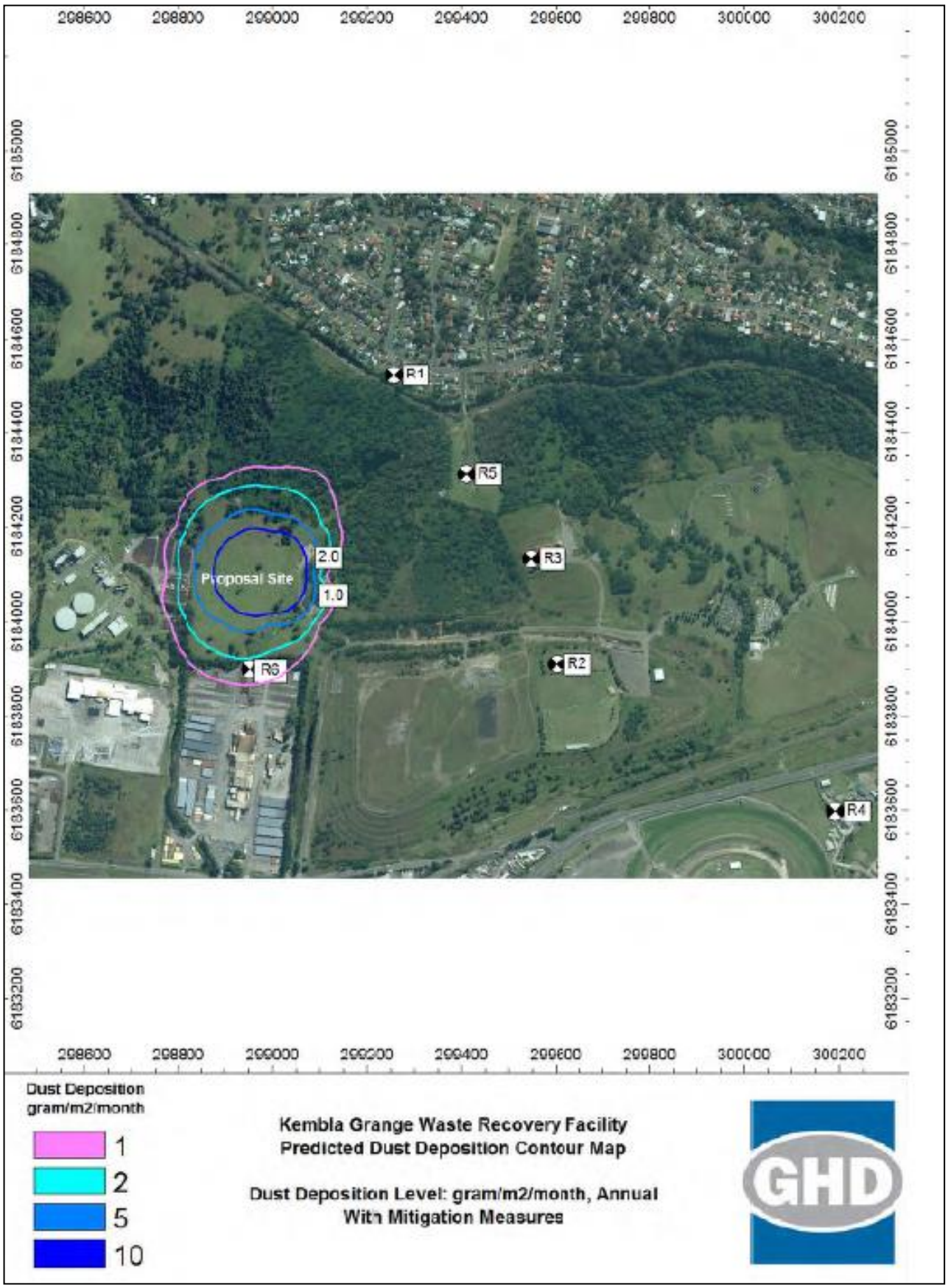

Figure 4: Predicted –Annual Dust Deposition (with mitigation) g/m^2/month

Reference: Figure 16 of Revised Air Quality Assessment, GHD July 2015

On the basis of this assessment, no changes are therefore proposed to the management and mitigation measures recommended in section 7 of the Air Quality assessment. Having regard to the relocation of Receptor 6 and the revised modelling which has been undertaken, the conclusions of the revised Air Quality Assessment undertaken by GHD in July 2015 with respect to dust impacts are as follows;

- *Based on the assumptions made in this assessment, 24-hour PM_{10} concentration levels (without mitigation) from site operations are not expected to comply with the adopted criteria at private Receiver R1, R3, R5 and R6. Annual average PM_{10} and TSP concentration levels, as well as monthly deposition rates are expected to readily comply with the adopted dust criteria at all receivers except R6.*
- *Dust mitigation measures in the form of chemical dust suppressants on the access roads Level 2 water sprays on the truck turning and backing areas are predicted to reduce dust emissions resulting in compliance with the adopted criterion at all receivers.*
- *Crushing activities were also found to be a large contributor to dust emissions. Wet suppression systems (such as spray nozzles) have also been adopted as part of the dust mitigation requirements for the site.*
- *Weather conditions that cause maximum dust impact are calm early mornings with little atmospheric dispersion or with generally consistent winds in the direction of the nearest sensitive receivers throughout the daytime period outside of rain events.*
- *Trucks on unsealed surfaces were identified as the most significant source of dust emissions on the site and provide the greatest contribution to off-site dust impact. Therefore, during times of consistent adverse weather conditions (dry and winds), operations of these items should be reduced, or water sprays should be used in order to minimise potential impacts.*
- *The application of standard dust mitigation measures will also assist to minimise potential impacts from general site operations.*

Accordingly, GHD in correspondence of 30 July 2015 confirm that they "*have revised the air quality assessment based on the comments made by the EPA. GHD believe that the amendments address the recommendations made by the EPA. The amendments to the level 2 air quality assessment do not change the outcomes of the assessment and the project would be acceptable from an air quality perspective*".

2.2 Air Quality- Odour

Patrick Autocare suggest the proposed facility will produce odours that could damage vehicles stored at the northern area of the site, near the site boundary. They are concerned that this would "*diminish their value to buyers and potentially harm operations at the site*". *Further, the submission notes:*

> *"The GHD air quality assessment does model our site via sensitive receiver R6 located north of the buildings on site. However, as noted above this location does not reflect the greatest potential impact likely to be experienced by the work force and vehicle stock on the site. Figure 19 of the GHD assessment "Predicted Peak odour Contour Map, OU with building ventilation" indicates that the 2 OU criteria limit will be exceeded on our site within approximately 100 metres of the northern site boundary.*

Consequently, a sensitive receiver location at the northern boundary would be more appropriate and provide a more conservation assessment requiring the proponent to modify their proposal so that the entirety of our site will not suffer odour impacts beyond the limits specified in the air quality criteria."

Response:

Within the revised Air Quality Assessment prepared by GHD in July 2015 Receptor 6 has been moved to the northern boundary of the Patrick site for both the odour and dust assessments. This location has been chosen to take into account maximum odour impacts from the proposal, with the revised location now shown in all figures within the revised Air Quality Assessment (July 2015).

Table 15 of the revised Air Quality Assessment contains the predicted peak odour impacts at receptors (OU) with no mitigation (reproduced as Table 7 in this RTS).

Table 7: Predicted peak odour impact at receptors (OU)- no mitigation

Residence	R1	R2	R3	R4	R5	R6
Proposal (OU)	2.6	1.1	1.5	0.4	2.1	6.7
Criteria (OU)	2	2	2	2	5	5

Reference: Table 15 of Revised Air Quality Assessment, GHD July 2015

Table 18 of the revised Air Quality Assessment contains the predicted odour impact at receivers for the mitigation scenario (reproduced as Table 8 in this RTS).

Table 8: Predicted peak odour impact at receptors (OU) – with building ventilation system

Residence	R1	R2	R3	R4	R5	R6
Proposal (OU)	1.1	0.6	0.7	0.3	0.9	2.7
Criteria (OU)	2	2	2	2	5	5

Reference: Table 18 of Revised Air Quality Assessment, GHD July 2015

The predicted peak odour contour map OU, without and with building ventilation (Figures 17 and 18 of the GHD Air Quality Assessment respectively), are reproduced in Figures 5 and 6.

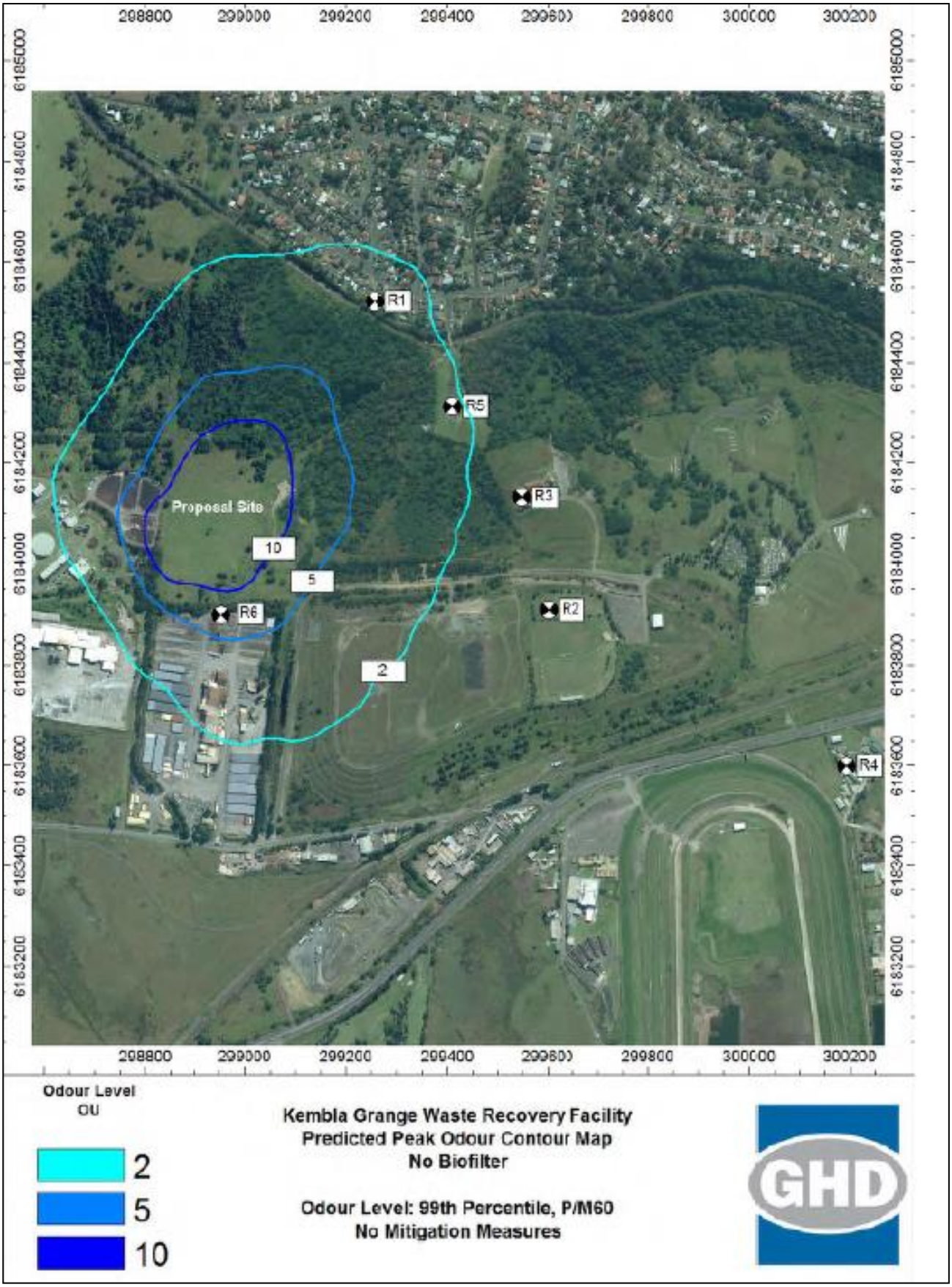

Figure 5: Predicted Peak Odour Contour Map, OU

Reference: Figure 17 of Revised Air Quality Assessment, GHD July 2015

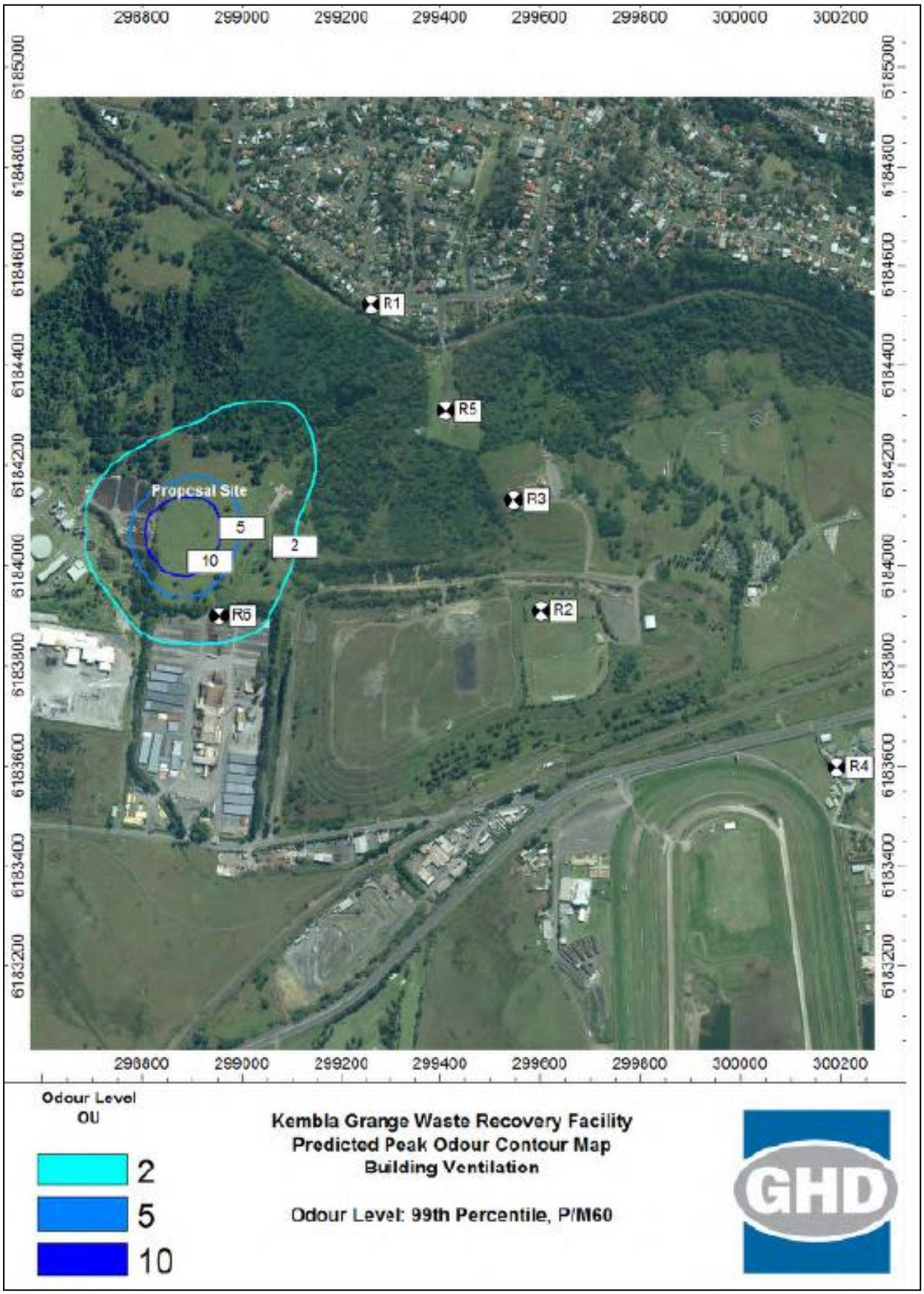

Figure 6: Predicted Peak Odour Contour Map, OU With Building Ventilation

Reference: Figure 18 of Revised Air Quality Assessment, GHD July 2015

Having regard to the relocation of Receptor 6 and the revised modelling which has been undertaken, the conclusions of the revised Air Quality Assessment undertaken by GHD in July 2015 in relation to odour impacts are as follows;

- *Based on the assumptions made in this assessment, predicted odour levels from proposed green waste composting without mitigation do not comply with the 2 OU criteria at receptors in Farmborough Heights.*
- *Based on the assumptions made in this assessment, predicted odour levels from the proposed green waste composting will comply with the criteria if the WRF building is kept at negative pressure and all air is released into the atmosphere via a stack.*

Accordingly, it is considered that the submission by Patrick Autocare, which suggests that cars will be impacted by odour, is unsubstantiated and on this basis no further change to the proposed mitigation measures nor method of operation is considered warranted.

2.3 Vegetation Management Plan and Bushfire Mitigation

Issues pertaining to Asset Protection Zones and the identification of the riparian corridor were addressed within submissions from Department of Primary Industries (Office of Water) and the Rural Fire Service. The issues are addressed under the following headings:

1) Asset Protection Zones
2) Management of the Riparian Corridor

The Office of Environment and Heritage also addressed the Vegetation Management Plan in its correspondence of 12 June 2015, and confirmed its support for the Vegetation Management Plan and Statement of Commitments, which had been updated to reflect agency comments.

2.3.1 Asset Protection Zones

The Department of Primary Industries (NSW Office of Water) has reviewed the Response to Submissions and revised Vegetation Management Plan and is of the opinion that there is some confusion with regard to whether any part of the riparian corridor at the site is still proposed to be used as an Asset Protection Zone (APZ). The Department refers to section 2.12.2 of the Response to Submissions Report, which *"indicates the RFS [Rural Fire Service] may support the request for the removal of the Inner Protection Area from the riparian corridor but this does not appear to have yet been resolved (page 57)."*

Wollongong City Council also requires that this matter be clarified and amended documentation be provided to address this issue. Further, Council requires the proposal to comply with the requirements of the NSW Rural Fire Service's Planning for Bushfire Protection, 2006 and recommended conditions by Rural fire Service for the application should be included by the department.

Response:

Within the Response to Submissions of May 2015 it was confirmed that consultation had occurred *"with Jason Maslen of NSW Rural Fire Service (by David Peterson of Ecological) to determine to clarify the components of*

the facility which are of greatest concern from a bushfire hazard perspective, with a view to investigating options to address the issues raised. Such consultation confirmed that the hazard posed by the material stored within stockpiles is the issues of greatest concern, due to potential level of flammability".

Following consultation with RFS it was determined that the most appropriate mechanism to ensure that storage flammable material does not occur in close proximity to the riparian corridor is to delineate the type of material which can be stockpiled, loaded and processed within 100m of the riparian vegetation and the type of material which can be stockpiled and loaded beyond the recommended 100m APZ distance. To address this issue an amended Site Plan (Revision O dated 8 May 2015) has been prepared by KFW which shows that to the east of the Indoor Processing Shed (which equates to a distance of in excess of 100m from the riparian corridor planting) only non flammable materials such as concrete, brick, rubble, rock, steel, soil, hardfill and the like will be loaded, processed and stockpiled. Flammable materials, such as timber and greenwaste (in addition to sand and soil), will be stockpiled and loaded to the west of the indoor processing and storage shed, at a distance of greater than 100m".

The NSW Rural Fire Service (RFS) has now reviewed the information provided in the Response to Submissions (RTS) Report of May 2015 and notes in correspondence dated 18 June 2015 that "*the RTS provided additional information in relation to the location of combustible materials processing on the site and requested the removal of asset protection zones from the riparian corridor which traverses the site*." This confirms that the RFS now supports the removal of the riparian corridor from identification as an inner protection area.

This is confirmed within the revised recommended conditions of consent from NSW RFS which state the following in relation to the use of the riparian corridor as an asset protection zone:

> *1. "At the commencement of building works, and in perpetuity, the proposed facility shall be managed as an Inner Protection Area (IPA) as outlined within section 4.1.3 and Appendix 5 of "Planning for Bush Fire Protection 2006" and the NSW Rural Fire Service's document 'Standards for asset protection zones'. This shall include the area around the proposed workshop building for a distance of 20 metres to the north and east but shall* ***exclude the riparian corridor which traverses the facility"*** *[bold emphasis added].*

On the basis of this advice from RFS regarding the exclusion of the riparian corridor, the Landscape Plan and Vegetation Management Plan have now both been updated to reflect this change. A copy of the revised Landscape Plan is contained as Appendix 3 of this RTS, whilst the revised VMP is attached as Appendix 4. Specifically, the Landscape Plan prepared by Ochre (now referenced as drawing 1442-LC01G amended on 12.08.15 and Drawing 1442-LC02 dated 13.12.12) and the Vegetation Management Plan prepared by Southern Habitat (Version 6, dated August 2015) have incorporated the following changes:

- The Landscape Plan now excludes the proposed offset areas (which previously offset reduced planting within the riparian corridor/APZ) and now shows planting within the riparian corridor consistent with that identified in the VMP.
- The Vegetation Management Plan has been revised to:

- Reference the fully structured riparian corridor and delete reference to this occurring where it does not conflict with Asset Protection Zones (in Sections 1.1, 2.7, 4.6 and Table 5.1 in Section 5.1)
- Include in Section 2.8 a table of works undertaken since issue of the original VMP.
- Confirm (in Section 3.3) matters to be addressed within the annual report and exclude reference to the annual report including details of the riparian corridor Asset Protection Zone in Sections 3.3 and 4.1.
- Include the updated Landscape Plan (Sheet 1, dated 12.8.15) within Appendix D. With respect this Landscape Plan it is noted that the correct version of the Landscape Plan was previously included in both the Vegetation Management Plan and the Response to Submissions (dated May 2015). The Office of Water has incorrectly read the date of the Landscape Plan as the date it was originally prepared and has not noted the most recent amendment date of the plan. Both the VMP and the RTS now include the Landscape Plan (Dwg 1442-LC01G) which was amended on 12.08.15, as reflected in the table of amendments shown on this plan.

Accordingly, the Statement of Commitments contained in Section 4 of this RTS now has been updated to remove any duplication with the recommended RFS conditions. The RFS conditions are considered acceptable and address construction standard of the buildings, upgrading of existing buildings and management of the facility as an Inner Protection Area, with the exclusion of the riparian corridor. Bicorp does not raise objection to the imposition of such conditions.

2.3.2 Management of the Riparian Corridor

The NSW Office of Water advise that:

1) *Statement of Commitment 4.4 - protection measure (9) refers to undertaking weed management of the revegetated buffer in accordance with the VMP (2013). It is recommended the SOC refers to the latest VMP.*
2) *The commitment 4.5(3) to extend the maintenance period is supported so that following the two year maintenance period, there is ongoing maintenance of the riparian corridor for the operational life of the facility.*
3) *Table 6.1 in the revised VMP includes an estimate of costs associated with the implementation of the recommendations contained in the revised VMP. The table includes an estimate of costs for the two year maintenance period of the riparian corridor. It is suggested it also includes an estimate of the cost for the ongoing maintenance of the riparian corridor for the operational life of the facility.*

Response:

Statement of Commitment 4.4 - protection measure (9) has been amended to refer to undertaking weed management of the revegetated buffer in accordance with Version 6 of the VMP dated August 2015.

It is noted that no other change is needed to the Statement of Commitments in relation to the maintenance of the riparian corridor as the Office of Water has advised that it supports commitment 4.5(3), which confirms that following the two year maintenance period, there is ongoing maintenance of the riparian corridor for the operational life of the facility.

Table 6.1.1 of the revised VMP (Version 6) now includes a cost of $7,500, being the estimated annual costs associated with the ongoing maintenance of the riparian corridor for the operational life of the facility.

2.4 Groundwater

The Department of Primary Industries (Office of Water) has included the following comments in its submission in relation to groundwater:

- *"The amendment to Statement of Commitment 4.2(1) is supported to include that the Office of Water shall be notified prior to any works occurring that are likely to intercept or extract groundwater.....*
- *The amendment to Statement of Commitment 4.3(2) is supported to include the monitoring is to commence at least three months prior to construction commencing and the results of the groundwater monitoring programme will be provided to the Office of Water."*

Response:
No further changes to the Groundwater Assessment prepared by Benviron nor the Statement of Commitments are required.

2.5 Flood Impact

The Office of Environment and Heritage has included the following comments in relation to potential flood impacts:

- *"We have no additional comments on flooding based on the information supplied in the proponent's Response to Submissions report. DPE should be satisfied that the floodplain management and water quality matters raised in previous submission have been addressed."*

Response:
No further changes to the Flood Analysis Review prepared by KFW nor the Statement of Commitments are required.

2.6 Geotechnical Matters

Issues relating to geotechnical matters were raised within Wollongong City Council's submission dated 2 July 2015. Wollongong Council states the following with respect to geotechnical matters, specifically in relation to pavement construction, recommendations for which they found to be inadequate in the RTS report:

- *"The 98% standard compaction ratio has been applied to the base and sub-base layers whereas Table 5.1 of ,A.S 3798 - 2007: Guidelines on earthworks for commercial and residential developments applies this density to the prepared subgrade which is directly under the pavement."*
- *"Current construction practice requires sub-base to be compacted to 95% modified compaction ratio and base to 98% modified compaction ratio. If the pavement is constructed to the lower densities as*

proposed then the heavy traffic loading is likely to induce rutting into the pavement, leading to premature fatigue failure in the asphalt wearing course."

- *"If standard compaction is proposed then it should comply with Roads and Maritime (R.MS) Specifications R44 and Q. Furthermore, in regards to pavement layer thicknesses, although the design layers in theory are satisfactory, they will be difficult to achieve on site due to limitations in construction tolerances without particle segregation in the 1.20mm thick layer."*

Response:

Drawing C15 prepared by KFW (Project No. KF110816, Sheet 6 of 18, Revision F, amended 2 July 2015) has now been amended to confirm within the 'Pavement Notes" that:

1. *"The final pavement thickness shall be determined from geotechnical testing to establish the subgrade CBR.*
2. *Pavement shall be designed generally in accordance with Section D2 "pavement design' of the Wollongong Subdivision Code 2008.*
3. *Pavement shall be constructed generally in accordance with Section C242.27 'Flexible Pavement' of the Wollongong Subdivision Code 2008. Pavement thickness shall be nominally as follows:*
   a. *Base course 150mm layer of DGB20 compacted to 98% of modified compaction .*
   b. *Sub base course shall be not less than 150mm thickness of DGS40 compacted to 95% modified compaction.*
4. *Pavement seal shall be either two coat hot bitumen seal (14/7) or 40mm thickness of AC14.*
5. *If CBR values warrant a thicker sub-grade of DGS40 shall be placed in layers of compacted thickness of not less than 100mm and not exceeding 200mm thickness (refer C242.27)."*

A copy of revised Surface Plan - Drawing C15,(Revision F) is contained as Appendix 5 of this RTS. the Statement of Commitments (4.1) has been amended to reflect this change.

2.7 Approvals, Plans and Schedule of Works

Issues raised by DPE and Wollongong City Council which relate to the submitted documentation and the extent of proposed works are addressed under the following headings.

1) Development History and Building Certificates
2) Completion Schedule
3) Existing and Proposed Works
4) Section 94 Contributions
5) Environment Protection Licence

2.7.1 Development History and Building Certificates

Wollongong City Council notes that DA-2009/1153/C was withdrawn by the applicant on 24 November 2014 and DA 2009/1153/D was approved (with amended and additional conditions) by delegated authority on 7 May 2015. Council has also confirmed that:

- The applicable consent which applies to the land is DA2009/1153/D.

- As at 2 July 2015 Council does not have any outstanding development applications and/or buildings certificates for the site however will notify the department if any applications are lodged.
- It is Council's understating that "*if the State Significant Development application is to be supported, the project approval granted will regularise the entire operation and use of the site as a resource recovery facility including existing and proposed structures and buildings. DA-2009/1153/D will no longer govern the operations of the facility/site*."
- There is current compliance action associated with the land via Council's Regulation and Enforcement Division. Council requests that if a determination is made it be provided with a copy of the project approval and conditions.

The Department of Planning and Environment has requested copies of all Building Certificates which have been issued in respect of the subject property.

Response:

An application for a Building Certificate (BC 2015/52) to address the site office and amenities buildings (labelled A to C on plan prepared by DJ Little Design), the weighbridge and the equipment area containing the 3 x shipping containers and fabric awning was lodged with Council on 22 July 2015. At the date of preparation of this Response to Submissions the Building Certificate application had not been determined.

The others issues raised by Council in relation to the development history are noted however do not require further action by the proponent.

2.7.2 Completion Schedule

The Department of Planning and Environment has requested that the proponent provide a schedule of completion of all of the approved but as yet unconstructed works.

Response:

We are advised by Bicorp that works approved pursuant to DA 2009/1153/D will be completed by 18 September 2015 and, if satisfactory, it is anticipated that an Occupation Certificate could be issued at this time.

2.7.3 Existing and Proposed Works

Wollongong City Council states within its submission:

"*A review of Table 3 specifically with regard to the schedule of works approved in DA 2009/1153/D has identified the following:*

Carparking

Modification D approved the location of the ten (10) carparking spaces south of Building D however, it is noted that these space are unformed and as part of the modified consent will be required to be constructed/formalised.

Site Offices and Amenities (Buildings A-D)

For clarity, buildings A-C exist and building D was new as part of Modification D. Certain upgrade works were conditioned requiring buildings A-C to comply with the Building Code of Australia including bushfire protection measures.

Shipping Containers

The approval of Modification D confirms that the site can only contain a maximum of three (3) shipping containers which form part of the fabric covered workshop equipment storage area. Any other storage containers are to be removed off site.

Rainwater Tanks/Leachate Tanks

The approved plans for Modification D show 2 x 20,000L rainwater tanks south of the shed and 1 x 20,000L tank west of the equipment area. The proposed plans (site plans) in the State Significant development no longer show the 20,000L rainwater tanks, rather 2 x 100,000L tanks west of the shed. The proposed rainwater tank east of the equipment area is 10,000L. The discussion in Table 3 of RTS with regard to the number, size and location of rain water tanks does not reflect the above.

Response:

Carparking: It is acknowledged that the ten carparking spaces to the south of Building D, which were approved pursuant to DA2009/1153/D, are required to be formalised/constructed and linemarked. Plan C38 prepared by KFW (which identifies the works to be undertaken as part of SSD 5300) contains additional text which re-confirms that six (6) additional spaces and a turning bay are to be provided adjacent to the approved ten (10) spaces. Further, this plan contains additional text to reconfirm that an additional ten (10) staff carparking spaces are to be located to the north of the offices. This is also reflected in Table 9 of this RTS.

Site Offices and Amenities (Buildings A-D): A Building Certificate application in relation to Building A-C was lodged with Council on 22 July 2015. No change to the plans nor Table 9 is required, as such documents already indicate that there is no change to such structures proposed as part of SSD5300. It is acknowledged that DA 2009/1153/D requires the upgrading of such buildings to comply with the Building Code of Australia, including bushfire protection measures.

Shipping Containers: Bicorp confirm that surplus shipping containers have been removed from the site, with the exception of the three (3) shipping containers, which comprise the approved equipment area.

Rainwater Tanks/Leachate Tanks: As confirmed by Council, DA2009/1153/D granted approval for the provision of 1 x 20,000 litre tank to the west of the equipment area. It is agreed that 2 x 20,000 litre tanks have also been approved to the south of the shed, however as previously noted in Table 3 one tank was approved pursuant to DA 2009/1153/A and the second tank was approved pursuant to DA 2009/1153/D. All of these tanks will be retained however approval is now sought for the following additional rainwater tanks as part of SSD5300, as reflected in Table 3:

- The addition to 1 x 10,000L rainwater tank to the east of the equipment area (in addition to the approved 20,000 litre tank to the west of the equipment area);
- The addition of 2 x 100,000L tanks to the west of indoor processing shed (in addition to the approved two x 20,000L tanks to the south of the shed).
- A 100,000L tank to the south of the workshop.

Table 3 has been updated in response to the issues raised by Wollongong City Council, to confirm those works which are existing, works which have been approved pursuant to DA-2009/1153/D and works which form part of the current application (SSD 5300). This table also details the relevant consents which approved the listed works, together with applicable construction and occupation certificates. Further, the following plans prepared by KFW (which are attached as Appendix 6) have been updated to clarify the approved and proposed works:

- Drawing C37 - Separate Development Plans (Sect 96), Revision B, dated 11.8.15 - which shows the works which have been approved pursuant to DA 2009/1153/D.
- Drawing C38 - Separate Development Plans (SSD5300), Revision C, dated 11.8.15 - which shows those works which are the subject of SSD5300
- Drawing C35 - Compilation Plan, Revision A, dated 11.8.15 - which provides an overlay compilation of the above plans and reflects the approved and proposed works.

Table 9: Schedule of Existing, Approved and Proposed Works

	DA 2009/1153(A) Approved 17/7/2012	**Construction Certificate 965-2012**	**Interim Occupation Certificate 965-2012**	**DA 2009/1163/D Approved 7/5/15**	**SSD5300 Under Assessment**
Processing and Stockpiling Area	DA 2009/1153 **granted approval for** Outdoor Open Processing, Stockpiling and Loading Area to the east of the shed containing designated stockpile areas. Area of 6750m^2.	-	OC incorporated earthworks and hardstand area.	**Authorised** 2064m^2 **expanded** Outdoor Open Processing, Stockpiling and Loading Area , increased from 6750m^2 to 8814m^2.	**Approval sought for the redesign and expansion** of the footprint of the operations conducted on the site to accommodate an extension of the central processing and stockpiling area including an operational area for an increased number of outdoor shredders, crushers, loaders and equipment.
Moveable Block Bin Storage Area/Operational Plan	Did not form part of DA2009/1153/A	-	-	**Approved** construction of moveable block bins.	**Approval sought for revised** Operational Plan including construction of expanded and relocated moveable block bins storage area.
Access Road	DA 2009/1153 **granted approval** for access road from Wylie Road to operational area. Southern section of access road from Wylie Road constructed as per approval.	-	OC incorporated roadworks.	**Authorised the relocated** position of the northern section of the access road to reflect 'as built' position re-routed around the expanded area and a waiting/passing area prior to the bridge.	**Approval sought for** a **widened and extended** perimeter road which provides access to the turning/backing area, processing/stockpiling area, truck parking and proposed workshop etc.
Bridge	DA 2009/1153 **granted approval** for bridge.	-	OC incorporated bridge.	Bridge **unchanged**	**Approval sought for construction of a replacement** bridge over the creek **and a new** cattle grate which precedes bridge access.
Designated Turning/Backing Area	Did not form part of DA2009/1153/A.	-	-	Did not form part of DA2009/1153/D.	**Approval sought for construction of a new** vehicle turning/backing area to the north of the processing area.
Weighbridge	Did not form part of DA2009/1153/A.	-	-	**Authorised the constructed** weighbridge, which	Weighbridge **unchanged** - not part of SSD application.

	DA 2009/1153(A) Approved 17/7/2012	Construction Certificate 965-2012	Interim Occupation Certificate 965-2012	DA 2009/1163/D Approved 7/5/15	SSD5300 Under Assessment
				was required to appropriately monitor approved tonnage levels.	
Carparking	DA2009/1153/A **approved** six (6) carparking spaces within the processing area. DA2009/1153/A **approved** ten (10) carparking spaces within the processing area. The 'as built' position differs from approved position.	**-**	OC incorporated hardstand area	**Authorised the relocation** of ten (10) spaces to the east of the access road in their 'as built' position.	**Relocation and construction** of carparking spaces to provide a total of 26 carparking spaces (ie an additional 16) on the site and a turning bay.
Untarping Area	Did not form part of DA2009/1153/A.	-	-	Did not form part of DA2009/1153/D.	**Approval sought for construction of new** untarping area to the west of the main access road.
Truck Parking	Did not form part of DA2009/1153/A	-	-	Did not form part of DA2009/1153/D	**Approval sought for construction of new** truck parking area (incorporating 6 spaces and 1 overnight space) in eastern portion of site.
Equipment Area	Did not form part of DA2009/1153/A	**-**	**-**	**Authorised the** demountable fabric covered workshop equipment storage area (with **re-arranged** storage containers) for parking of approved equipment 'as built'.	Equipment area **unchanged** - not part of SSD application. **Approval sought** for adjacent transtank for fuels and oil storage.
Site Offices and Amenities (Buildings A-D)	**Approved** the construction of a workshop, manager's office and two shipping containers to west of watercourse.	Approved the construction of office.	**-**	**Authorised the 'as built' relocation & reconfiguration** in the size & shape & number of buildings for the purpose of offices, staff amenities etc (ie. 4 buildings labelled A-D). Included pergola and disabled ramp between buildings and carpark.	Site offices and amenities **unchanged** - not part of SSD application
Site Office (Building E)	Did not form part of DA2009/1153/A	-	-	Did not form part of DA2009/1153/D	**Approval sought** for Site Office (Building E) to east of watercourse.
Workshop (Building F)	Did not form part of DA2009/1153/A	-	-	Did not form part of DA2009/1153/D	**Approval sought** for Workshop (Building F) to east of watercourse to be used for servicing and mechanical repairs of trucks and plant equipment.
OH&S Training Room (Building G)	Did not form part of DA2009/1153/A	-	-	Did not form part of DA2009/1153/D	**Approval sought** for OH&S Training Room (Building G) to east of watercourse.
Shed (Building H)	**Approved** the construction of a shed (to the west of the processing area).	Approved the construction of shed.	-	No change - did not form part of DA 2009/1153/D.	**Approval sought for alteration** to accommodate Identification of the approved workshop as an indoor processing and storage shed and minor

	DA 2009/1153(A) Approved 17/7/2012	Construction Certificate 965-2012	Interim Occupation Certificate 965-2012	DA 2009/1163/D Approved 7/5/15	SSD5300 Under Assessment
					alterations to the design of the building.
Shipping Container	Required **removal** of one existing shipping container to east of watercourse.	-	-	Site is to contain a maximum of three (3) shipping containers (which form part of equipment storage area).	**No change** - removal does not form part of SSD5300.
Green Waste Shredding Area	Did not form part of DA2009/1153/A	-	-	Did not form part of DA2009/1153/D	**Approval sought** for construction for green waste shredding area.
Drainage & Water Quality/ Recycling Works	DA 2009/1153/A **Approved** the construction of an OSD pond south of processing area/stockpiling area.	**-**	OC incorporated drainage works	**Approved amended** drainage design including upgrading of OSD and water recycling pond, fencing, access ramp, scour protection.	**Approval sought for additional** drainage works to accommodate the redesigned and expanded storage areas and to provide improved wastewater management including a shredding runoff pond, enlarged water recycling pond and detention basins (A and B).
Rainwater Tanks/ Leachate Tanks	**Approved** 1 x rainwater tank to the southeast of shed (DA 2009/1153). Additional tank approved pursuant to DA2009/1153/D.	**-**	OC incorporated drainage works	**Approved** provision of: - 1 x 20,000L water tank to allow for draining of the covered equipment area; - 1 x additional 20,000l tank to south west of shed (resulting in a total of two tanks to south of shed); and - 1 x 10,000L water tank to allow for drainage of offices.	**Approval sought for:** **-** Leachate collection tanks to south of shed; - The addition of 1 x 10,000L rainwater tank to the east of the equipment area (n addition to the approved 20,000 litre tank to the west of the equipment area); - The addition of 2 x 100,000L tanks to the west of indoor processing shed (in addition to the approved 2 x 20,000 L tanks to the south of the shed. - A 100,000L tank to the south of the workshop.
Generator	Did not form part of DA2009/1153/A	**-**	**-**	**Authorised the existing** generator located to the north of the site offices 'as built'.	**No change** - generator does not form part of SSD5300.
Septic Tank	**Approved** septic tank to south of shed.	**-**	**-**	**Authorised the** septic tank in its existing location adjacent to the site offices and the provision of a further tank to the south of the offices.	**No change** - septic tank does not form part of SSD5300
Vegetation Management	**Approved** riparian corridor works.	Controlled Activity Approval issued 27/2/2012 pursuant to 10ERM2009/1008)-	-	No change - did not form part of DA 2009/1153/D.	**Approval sought for amendment** to the riparian corridor works to accommodate reduced planting in specified areas for Asset Protection Zone purposes and offset areas
Landscaping	Did not form part of DA2009/1153/A	-	-	Did not form part of DA2009/1153/D	**Approval sought** for landscaping works as shown on the submitted Landscape Plan.

2.7.4 Section 94 Contributions

Wollongong City Council raised the following issues with regard to section 94 contributions:

- *"The West Dapto Urban Release Area Section 94 Contributions Plan (2011) applies to the subject land. The Section 94 contributions amount is to be calculated based on the Net Developable Area. After a review of the documentation provided with the application, the contributions amount will be calculated based on the area of 4.0224 hectares. The contributions rate will be indexed as per Clause 2.12 of the Plan."*

- *"This section 94 contribution applicable has been provided as a recommendation condition no. 40. Please note this figure is generated at this point in time and the total monetary figure may vary at the time of determination of the application, due to indexation. Therefore it is recommended prior to the determination of the application, the Department confirm with Council the correct monetary figure for section 94 contribution, Prior to the issue of any Construction Certificate, the contribution will be required to be payable to Wollongong City Council."*

Response:
Council has confirmed that a section 94 contribution of $163,255.35 will be payable, based on an area of 4.0224 hectares, with indexing of this contribution. Condition 40 of Council's recommended conditions of consent specify this contribution. No further change to the project or Statement of Commitments is required as based on this advice.

2.7.5 Environment Protection Licence

With regard to environmental monitoring, Wollongong City Council state the following:

- *"It is recommended that any conditions that form part of a project approval and/or Environment Protection Licence with the NSW Environmental Protection Authority that requires environmental monitoring and/or audits, should require the information be made publicly available to the community."*

Response:
The comments provided by Council in relation to the obtaining of an Environmental Protection Licence are concurred with. With regard to the availability of environmental monitoring information to the general public, this is a matter to be addressed by the EPA and requires no further action by the proponent.

2.8 Public Utility infrastructure

Wollongong City Council raised the following issue with regards to the provision of sufficient public utility infrastructure:

"Sufficient infrastructure must be made available to service the development with regard to the supply of water, electricity and, the disposal and management of sewage under clause 7.1 of Wollongong Local Environmental Plan 2009. As mentioned in previous correspondence, the site is not connected to Sydney Water and on-site sewage management is proposed for the development. It is unclear whether the site is

connected to electricity, as reference to on-site generators form part of the proposal. Due to the scale and nature of the proposal it is considered the application submission has not clearly demonstrated adequate arrangements with regard to the supply of water and electricity. If connection cannot be reasonably achieved for the site, documentation should be sought from the relevant utility providers to demonstrate why. Recommended conditions have been included in Attachment B requiring satisfactory arrangements with both Sydney Water and Endeavour Energy (refer to condition no.9 and 42).

Response:

Clause 7.1 of Wollongong Local Environmental Plan 2009 states the following with respect to the provision of public utility infrastructure:

(1) The objective of this clause is to ensure that sufficient infrastructure is available to service development.

(2) Development consent must not be granted for development on land unless the consent authority is satisfied that any public utility infrastructure that is essential for the proposed development is available or that adequate arrangements have been made to make that infrastructure available when it is required.

(3) This clause does not apply to development for the purpose of providing, extending, augmenting, maintaining or repairing any public utility infrastructure.

(4) In this clause:

public utility infrastructure includes infrastructure for any of the following:

(a) the supply of water,

(b) the supply of electricity,

(c) the disposal and management of sewage.

KFW has confirmed that the reticulated water supply currently does not extend to Wylie Road but is located on West Dapto Road, thereby providing a cost implication for connection. Further, there is no nearby sewer connection available for the facility.

The subject site is currently self generating in terms of its energy requirements and Bicorp are committed to continued reuse/recovery and the achievement of sustainable energy targets within its expanded operations. The current and expanded facility will utilise the following:

- Rainwater tanks and a permanent pool for water supply, with the proposed development to incorporate an additional 10,000L rainwater tank to the east of the equipment area (n addition to the approved 20,000 litre tank to the west of the equipment area); an additional 2 x 100,000L tanks to the west of indoor processing shed (in addition to the approved 2 x 20,000 L tanks to the south of the shed and a 100,000L tank to the south of the workshop. The WSUD and Flood Analysis report prepared by KFW (June 2014) confirms the following in relation to water reuse:

  "Up to three 100,000 litre rainwater tanks will be installed to collect roof water. The rainwater captured may be used for toilet flushing, dust suppression and equipment washing. Rainwater for the 100,000 litre tanks and be plumbed into toilets and decanted to the site water tanker for dust suppression. Captured water may be used in the crusher to maintain moisture content and reduce dust. In addition to the three rainwater tanks a permanent pool will be constructed. The permanent pool will have a storage volume of 3,248m^2. The permanent pool is the last 'carriage' in the treatment train' and will

provide opportunity to use the captured water for dust suppression. The daily dry water demand for dust suppression and other site operations is on the order of 40,000 litres per day".

KFW also confirm within the report that *"water conservation targets will be met by using harvested rainwater on site".*

- Diesel usage in on site generator during construction and operation to provide all power to the site. The intention of Bicorp is to convert to solar electricity at a future date. The Greenhouse Gas Assessment prepared by Pacific Environment in October 2013 recommends that the following energy efficient measures be introduced for on- site facilities
    - Implement energy metering and monitoring
    - Employ efficient lighting and lighting control technologies (timers and light level sensors)
    - Utilise energy efficient appliances and office equipment.

  Commitment 4.10 of the Statement of Commitments contained in Section 4 of this RTS has been amended to reflect the recommendation for the implementation of the energy efficient measures noted above.

- A pump out system of the purpose of on- site effluent management, as referenced within condition 76 of Development Consent 2009/1153/D issued by Wollongong City Council.

Wollongong City Council, in its issuing of Development Consent 2009/1153/D has confirmed that connection to public utility infrastructure is not required for the development which was the subject of this application and it is intended that the current arrangements which are in place will continue to provide electricity, water and the disposal of effluent, in an expanded capacity. Accordingly, it is considered that the provision of public utility infrastructure is not "essential" for the proposed development, and on this bases the provisions of clause 7.1 of WLEP 2009 are met.

2.9 Site Operations and Environmental Impacts

The 'Private and Confidential' submission of 15 June 2015 raises a number of issues pertaining to unlawful development, regularisation, inconsistent with zone objectives, compliance with EPA and Director General requirements, unacceptable environmental impacts and trustworthiness of proponent.

Response:

The Department of Planning and Environment in correspondence to Bicorp dated 19 January 2015 provided a summary of the issues raised by within a 'Private and Confidential' submission dated 7 November 2014. This submission was lodged in response to the formal exhibition period for SSD5300, which was conducted between 9 October 2014 and 7 November 2014. A response to the issues raised within the Department's summary advice was contained in the Response to Submissions prepared by TCG Planning dated 5 February 2015.

A further submission from the same objector, dated 15 June 2015 was later lodged with the Department of Planning and Environment. It is noted that many of the issues raised within this later submission are the same or similar to those raised in the submission dated 7 November 2014 and hence were addressed in the previous Response to Submissions.

The attached correspondence from RMB Lawyers (refer Appendix)provides a response to the proponent's position in relation to the later submission which was received on 15 June 2015 and submits that "*the new issues should not be accepted as they are out of time*".

2.10 Traffic Impacts

In December 2014 Cardno prepared a Rail Level Crossing Modelling Traffic Management Plan to address traffic impact on the railway level crossing located on West Dapto Road, Kembla Grange. This report addressed the traffic impact on the railway level crossing located on West Dapto Road in response to Sydney Trains comments. Specifically, Cardno assessed the rail level crossing, the impacts of queuing on the approaches to the rail level crossing and the queue from the West Dapto Road / Princes Highway intersection to the rail level crossing. Sydney trains reviewed the documentation and confirmed that the preparation of a Stage 2 assessment is not required.

Cardno have recently (July 2015) advised Bicorp's that "*following an internal review we have identified a deficiency in the Rail Level Traffic Assessment for Wollongong Recycling & Building Supplies Pty Ltd. Due to traffic survey information relating to the racecourse not being received from Council, Cardno was unable to include an assessment of special event traffic on race days. With the addition of this special event traffic there is a risk that queuing on West Dapto Road would extend over the level crossing, thereby potentially creating a road safety risk*".

Accordingly, further information regarding the weekend operations of the waste recovery facility were obtained by Cardno and a revised Rail Level Crossing Modelling Traffic Management Plan West Dapto Road - Kembla Grange (Version D dated 25 August 2015) has now been prepared. A copy of the report is attached as Appendix 8. This report states in Section 6 Addendum:

"*This Traffic Impact Assessment for Wollongong Recycling Building Supplies has shown that the 95th percentile queue lengths on the West Dapto Road leg of the West Dapto Road/ Princes Highway intersection are not expected to extend as far as the rail level crossing during the AM and PM peak periods in the years 2015 and 2025. It should be noted, however, that this traffic study does not consider the traffic generated from special events at the Kembla Grange racecourse. It is expected that during the weekend special events the traffic volume generated by the Wollongong Recycling and Building Supplies development would be 25% of the weekday traffic. In the worst case of full development, the traffic volume expected to be generated during the weekend peak is 24 vehicles per hour. This is less than 1 vehicle per minute. A sensitivity analysis showed that a 15% increase in traffic volumes in the weekday peak periods did not result in queuing across the rail level crossing. Therefore , it is anticipated that the proposed development traffic would not create a significant impact if a proper traffic management plan is implemented by the operators of special events. This should consider deterring or minimising right turning and through movements from the West Dapto Road approach to the Princes Highway intersection during these special events.*"

3 Modifications Made to the Project

Following the undertaking of a revised Air Quality assessment by GHD, which incorporated the relocation of Receptor 6 as requested by the EPA, GHD confirm that *"dust mitigation measures in the form of chemical dust suppressants on the access roads Level 2 water sprays on the truck turning and backing areas are predicted to reduce dust emissions resulting in compliance with the adopted criterion at all receivers."* Further, in response to a submission from Patrick Autocare, dust from crushing activities alone has been assessed and GHD confirm that *"monthly dust deposition from crushing is predicted to be 0.034 g/m^2 at the property boundary and even less at other areas of the Patrick site. This represents less than 2% of the allowable increment amenity dust criteria in the Approved Methods and is not predicted to cause any noticeable impact on cars at the Patrick site"*.

Within the revised Air Quality Assessment prepared by GHD in July 2015 Receptor 6 has also been modelled to the northern boundary of the Patrick site to take into account maximum odour impacts from the proposal. GHD continue to conclude that *"based on the assumptions made in this assessment, predicted odour levels from the proposed green waste composting will comply with the criteria if the WRF building is kept at negative pressure and all air is released into the atmosphere via a stack."*

Accordingly, GHD in correspondence of 30 July 2015 confirm that they *"have revised the air quality assessment based on the comments made by the EPA. GHD believe that the amendments address the recommendations made by the EPA. The amendments to the level 2 air quality assessment do not change the outcomes of the assessment and the project would be acceptable from an air quality perspective"*.

Following advice from the NSW Rural Fire Service that it now supports the removal of the riparian corridor from identification as an inner protection area, the Landscape Plan and Vegetation Management Plan have now both been updated to reflect this change.

With respect to flood and groundwater matters no modifications are required to the project, with the Department of Primary Industries confirming that it concurs with the groundwater measures incorporated in the Statement of Commitments and the Office of Environment and Heritage confirming that it has no additional comments on flooding. With respect to geotechnical and pavement surface issues raised by Wollongong City Council, minor amendment to the pavement surface treatment is proposed to address the comments raised, with Drawing C15 prepared by KFW (Project No. KF110816, Sheet 6 of 18, Revision F, Amended 2 July 2015) being amended in the 'Pavement Notes' to reflect this change.

In order to provide clarification regarding the scope of works minor amendment to Table 3 of this RTS has been provided, notably in relation to the provision of rainwater tanks. Further, Drawings 35, 37 and 38 prepared by KFW have undergone minor amendment to clarify the works which have been approved pursuant to DA 2009/1153/D, and the works which are the subject of SSD5300.

The additional analysis which was undertaken in response to the submissions received confirms that no change to the layout or the capacity of the facility is warranted, as the proposed Kembla Grange Waste

Recovery Facility, which will process up to 230,000 tonnes per annum, will have minimal environmental impacts, subject to the implementation of the recommended mitigation strategies.

The Kembla Grange Resource Recovery Facility will result in the establishment of an expanded innovative mixed construction and demolition waste sorting, processing and recycled product manufacturing facility, which currently does not exist elsewhere within the Illawarra region. The project will create sustainable jobs, divert waste from landfill, recover valuable resources and produce a range of recycled materials to be sold back to the Illawarra and surrounding markets adding value to the local economy. The expanded waste recycling operation will generate a further additional 27.7 full time equivalent jobs at the site on an ongoing long term basis and will generate significant local employment during the construction phases.

4 Revised Statement of Commitments

The following revised Statement of Commitments amends the Statement which was submitted to the Department of Planning and Environment in May 2015 and has been prepared in response to the outcomes of additional investigations which have now been undertaken. Bicorp commit to the undertaking of the following:

4.1 Geotechnical Design Solutions, Works and Investigations

The following recommendations to address geotechnical constraints will be implemented by Bicorp:

1) Additional site investigations (confirmatory holes and pits) will be undertaken, if required by the supervising geotechnical consultant at critical locations (eg on steeply sloping ground) to ensure that the local and regional stability are assessed with respect to the proposed engineering elements and design performances.
2) As part of site preparation prior to construction works, all vegetation, topsoil and any uncontrolled fill will be removed.
3) All footings will be found on same bearing stratum.
4) The base of all footing excavations will be inspected by a qualified geotechnical engineer to ensure footing will found in competent materials as designed.
5) Should variation in descriptions in soil types, colour or depths be discovered during construction, a geotechnical engineer will be notified so that the potential influence on the footing as it may be affect surrounding engineering elements may be assessed.
6) During design consideration will be given to the CSIRO sheet BFT-18 *'foundation maintenance and footing performance*.
7) Temporary surface protection against erosion will be provided in accordance with the requirements of the supervising geotechnical engineer.
8) In the long term, the excavation faces will be retained by engineered retaining structure in particularly along the eastern hilly section of the site. These structures will be designed to withstand the applied lateral pressures of the soil/rock layers, the existing surcharges in their zone of influence; including existing structures, and construction related activities, and also hydrostatic pressures (if it is appropriate).
9) The final pavement thickness shall be determined from geotechnical testing to establish the subgrade CBR.
   - Pavement shall be designed generally in accordance with Section D2 'pavement design' of the Wollongong Subdivision Code 2008.
   - Pavement shall be constructed generally in accordance with Section C242.27 'Flexible Pavement' of the Wollongong Subdivision Code 2008. Pavement thickness shall be nominally as follows:
     - Base course 150mm layer of DGB20 compacted to 98% of modified compaction .
     - Sub base course shall be not less than 150mm thickness of DGS40 compacted to 95% modified compaction.
   - Pavement seal shall be either two coat hot bitumen seal (14/7) or 40mm thickness of AC14.
   - If CBR values warrant a thicker sub-grade of DGS40 shall be placed in layers of compacted thickness of not less than 100mm and not exceeding 200mm thickness (refer C242.27).

4.2 Groundwater

The following will be implemented by Bicorp in relation to groundwater monitoring and reporting:

1) Groundwater presence or levels will be confirmed if construction is undertaken during or following adverse weather or if a significant time period elapses between this investigation and construction. The Office of Water will be notified prior to any works occurring that are likely to intercept or extract groundwater and an estimate of the likely take of groundwater will be provided to the Office of Water to assess the need for an authorisation.
2) Quarterly Testing of the groundwater on the site will be undertaken to identify any future trends and characterise the groundwater within the local area. Monitoring will commence at least three months prior to construction commencing and the results of the groundwater monitoring programme will be provided to the Office of Water.
3) Development of a Soil and Water Management Plan to minimise the amount of surface runoff and potential migration of contamination.
4) Engineering of the development working platform to minimise the infiltration of any contaminants into the underlying soils.

4.3 Hazards

The following measures will be implemented by Bicorp to address hazards associated with transport, construction, on site storage of fuels/hydrocarbons, and site operation in relation to dust, bushfire and theft:

1) Preparation of an Emergency Management/Response Plan.
2) Preparation of an Environmental Management Plan.
3) Preparation of a Work Health and Safety Plan.
4) Preparation of a Hazardous Material Management Plan.
5) Appropriate induction and training of personnel and the implementation of operator training.
6) The purchase of spill response equipment and the implementation of spill response training.
7) Emergency services (police, fire brigade) will be contacted when required.
8) The implementation of site security to limit public access, as required.
9) Procurement of fire fighting equipment adequate for the level of risk and regular maintenance and testing of such equipment.
10) Preparation of a Bushfire Management Plan.
11) Regular maintenance inspections of equipment.
12) The preparation of a Traffic Management Plan.
13) Implementation of procedures to ensure that handling and storage of flammable and combustible liquids is in accordance with Australian Standards.
14) Storage and handling of all substances, including waste, under conditions that minimise the risk of fire, explosion or toxic emissions, with implementation of specific measures that address the use of solvent-extraction reagents.
15) Implementation of specific procedures for high risk tasks.
16) Appropriate induction and training of personnel in emergency response (internal and external) procedures.

17) Ongoing communication with agencies such as Rural Fire Services and monitoring of risk levels in relation to fire danger ratings.
18) Vacuuming and sweeping of site, as required.
19) Procurement of spill and water cart equipment adequate for the level of risk identified for the project and regularly maintained and tested to ensure good working order.
20) If a major failure of air quality management systems occurs, processing will cease at the facility until the management system is repaired and operational.

4.4 Biodiversity

Bicorp commit to the implementation of the following biodiversity protection measures:

1) Retention of remnant intact native vegetation / endangered ecological communities.
2) Erection of a standard three strand wire fence around the extent of the Illawarra Subtropical Rainforest located within the area of workings to indicate and protect this particular remnant. A buffer zone of 5m will apply within this fencing.
3) Retention of identified hollow bearing trees.
4) Retention of a 10m wide vegetated riparian corridor to protect aquatic habitats.
5) Retention of identified hollow bearing tree.
6) Revegetation of disturbed batters and landscape areas with native flora species.
7) Undertaking of weed management in accordance with the requirements of the Noxious Weeds Act (1993).
8) Removal of vegetative matter from earth moving machinery prior to entering and leaving the site.
9) Undertaking of weed management of the vegetated riparian buffer area in accordance with the Vegetation Management Plan prepared by Southern Habitat (Version 6, dated August 2015).
10) Rapid revegetation and/or stabilisation of disturbed areas.
11) Remove windblown rubbish.

4.5 Vegetation

1) The following will be implemented by Bicorp to protect the Moreton Bay Fig on the site:
   - Retention of a reserve as shown on the Landscape Plan dated August 2015.
   - Removal of the Hickory Wattles 4 & 5 (simply by cutting out with a chainsaw, not heavy machinery) which will disrupt the Fig's roots.
   - Removal of the Lantana infestation.
   - Retention of the small Whalebone Tree east of the Fig, and the young Moreton Bay Fig about 7m south - west of the Fig.
   - Secure quarantining of the Fig's reserve on the works (i.e. east) side with a steel picket and ribbon fence(known as a Tree Protection Zone/TPZ exclusion fence).
   - No works (apart from Lantana & Hickory removal) to be undertaken within this zone.
2) The Restoration Plan of Action, as contained in the Vegetation Management Plan, updated by Southern Habitat in August 2015 will be implemented.
3) A two (2) year maintenance programme will commence following completion of primary weed control and revegetation throughout the riparian corridor. Following this maintenance period and final report, the ongoing maintenance shall continue for the operational life of the facility. The maintenance will require the compilation and submission of an annual report to NSW Office of Water

and must be prepared by a suitably qualified person/organisation. The annual report must include but is not limited to site conditions including:

- Weed cover percentage
- Native cover percentage
- Identification and determination of actions to remedy any issues pertaining to the ongoing maintenance of the riparian vegetation for the 12 months following the report.

4.6 Bushfire

The following bushfire mitigation and protection recommendations will be adhered to by Bicorp:

1) The stockpiling and loading area for green waste and timber is to be confined to the western and south-western sides of the 'Indoor Processing & Storage Shed' over 100 m from the riparian area or within the Indoor Processing & Storage Shed.
2) The development will be serviced by a static water supply to meet the PBP requirement for a minimum amount of 20,000 litres for fire fighting purposes.. The water supply will be visible and readily accessible to fire fighting vehicles and a suitable connection for Rural Fire Service purposes will be made available (65 mm Storz fitting). The supply will be accessible to within 3 m by fire fighting appliances

4.7 Acoustic Measures

The following general noise mitigation measures will be implemented by Bicorp to mitigate construction noise impacts:

1) All engine covers will be kept closed while equipment is operating.
2) As far as possible, materials dropping heights into or out of trucks will be minimised.
3) Vehicles will be kept properly serviced and fitted with appropriate mufflers. The use of exhaust brakes will be eliminated, where practicable.
4) Machines found to produce excessive noise compared to industry best practice will be removed from the site or stood down until repairs or modifications can be made.
5) All equipment will be selected to minimise noise emissions. Equipment will be fitted with appropriate silencers and be in good working order. Machines found to produce excessive noise compared to normal industry expectations will be removed from the site or stood down until repairs or modifications can be made.
6) The constructor will provide a phone number at the site entrance detailing the site contact so that noise complaints can be received and addressed in a timely manner.
7) Upon receipt of a noise complaint, monitoring will be undertaken and reported as soon as possible. If exceedances are detected, the situation will be reviewed in order to identify means to attempt to reduce the impact to acceptable levels.
8) All site workers will be sensitised to the potential for noise impacts on local residents and encouraged to take practical and reasonable measures to minimise the impact during the course of their activities. This will include:
   - Avoid the use of loud radios.
   - Avoid shouting and slamming doors.
   - Where practical, machines will be operated at low speed or power and switched off when not being used rather than left idling for prolonged periods.

- Keep truck drivers informed of designated vehicle routes, parking locations and delivery hours.
- Minimise reversing.
- Avoid dropping materials from height and avoid metal to metal contact on material.
- All engine covers would be kept closed while equipment is operating.

9) When the expanded facility is operational compliance noise monitoring will be undertaken at that time to determine the noise contribution of all significant site equipment and machinery and the impact on nearby receivers.
10) Upon receipt of a valid noise complaint, monitoring would be undertaken and reported as soon as possible. If exceedances were detected, the situation would be reviewed in order to identify means to attempt to reduce the impact to acceptable levels.
11) Where possible, avoid the use of noisy equipment such as the crusher and screen during the night time period (6am-7am) when the site is operational.

4.8 Environmental and Amenity Impacts

The following flood mitigation and water quality measures will be implemented by Bicorp:

1) Up to three 100,000L rainwater tanks in addition to a permanent pool to provide for dust suppression.
2) Use of recycled crushed concrete in road pavements and hardstand areas to promote infiltration and reduce the volume of surface runoff.
3) Provision of two OSD basins, one on either side of the watercourse.
4) Capture of hydrocarbons, including two Rocla downstream defenders to capture hydrocarbons in oil and grease from runoff. A Humeceptor is also to be installed upstream.
5) Implementation of a Operation and Maintenance Plan for WSUD in regard to weekly and monthly inspection and maintenance, as well as after every rainfall event >25mm, in addition to six monthly inspections and maintenance.

4.9 Dust and Odour Management

The following general dust mitigation will be implemented by Bicorp:

1) Material will be watered prior to it being loaded for haulage, where appropriate.
2) Watering of truck turn around and reversing areas will be undertaken with at least 2L/m^2/hr as required to control dust emissions. Any other areas that are visible sources of dust will be appropriately watered until dust impact is no longer an issue.
3) Chemical Dust suppressant spraying will be undertaken on the unsealed access road from the site office into the site. This will be undertaken as per the supplier's requirements. Additional dust suppression will be applied if dust from the road is visibly observed to be leaving the site boundary.
4) A dust suppression system will be installed and operated for the crushing plant. The system will be operated as per manufacturers' specification and used whenever dust from the crusher has the potential to be transported offsite in the direction of sensitive receptors.
5) The size of storage piles will be minimised where possible.
6) Cleared areas of land will be limited and cleared only when necessary to reduce fugitive dust emissions.
7) On site traffic will be controlled by designating specific routes for haulage and access and limiting vehicle speeds to below 25 km/hr.

8) All trucks hauling material should be covered before exiting the site and should maintain a reasonable amount of vertical space between the top of the load and top of the trailer.
9) Material spillage on sealed roads will be cleaned up as soon as practicable.
10) A rumble-strip at the interface of the sealed road and the unsealed access road will be provided.
11) Excavating operations conducted in areas of low moisture content material will be suspended during high wind speed events or water sprays will be used.

The following odour mitigation measures will be implemented by Bicorp:

12) Design and installation of an appropriate building ventilation system at negative pressure at all times during operation.
13) A site odour management plan be developed prior to commissioning the facility with the increased capacity.
14) On site storage times of organic material will be minimised prior to processing.
15) If the chosen composting process allows, the matured compost stockpiles will be covered to reduce the ingress of water and reduce odour.
16) If the leachate pond is a significant source of odour Bicorp will investigate the use of aerators to minimise odour, enhance biological degradation and encourage evaporation.
17) Validation sampling of odour from any key odour discharge points will be undertaken after commissioning.
18) Annual odour sampling of the building ventilation stack will be undertaken.
19) If required (as demonstrated by annual odour sampling), all air will be treated in an odour control system prior to discharge.

4.10 Energy Efficiency

The following recommendations pertaining to energy efficiency will be implemented by Bicorp:

1) Diesel will be used in the on site generator during construction and operation to provide all power to the site.
2) Diesel will be used in on site vehicles.
3) Diesel will be used in the transport of construction materials, operation raw materials and waste to the site and to transport site outputs to end- use/disposal location, where such machinery is operated by Bicorp.
4) Implement energy metering and monitoring
5) Employ efficient lighting and lighting control technologies (timers and light level sensors)
6) Utilise energy efficient appliances and office equipment.

4.11 Waste Management

The following will be adhered to by Bicorp in relation to the acceptance, processing. storage and disposal of waste:

1) The proposed development will operate at a maximum capacity of 230,000 tonnes of waste per annum;
2) The facility will have a maximum storage capacity of 45,000 tonnes of waste at any one time;
3) The facility will have a processing capacity of up to 871 tonnes per day;

4) The facility will process up to 30,000 tonnes of non putrescible organics per annum (of which 6,300 tonnes per annum will be composted and 23,700 tonnes per annum will be mulched or sold as firewood);
5) The facility will store no more than 2500m^3 of organic matter on the site at any time (which includes timber , tree stumps etc). Of the 2500m^3 of organics, no more than 500m^3 tonnes of this will comprise compost.

4.12 Heritage Conservation

If impacts are proposed outside the current development footprint in conjunction with a future development application in areas of low-moderate Aboriginal archaeological potential, further investigations will be undertaken at that time.